CIO

THE MAGAZINE FOR INFORMATION EXECUTIVES

NOVEMBER 15, 1998

SECTION ONE
166 PAGES IN TWO SECTIONS

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California's John Thomas Flynn has killed more projects than most private sector CIOs have blessed

Reform Party

How Government CIOs Are Blowing Up Bureaucracy

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ALSO INSIDE

Building Better Service Level Agreements

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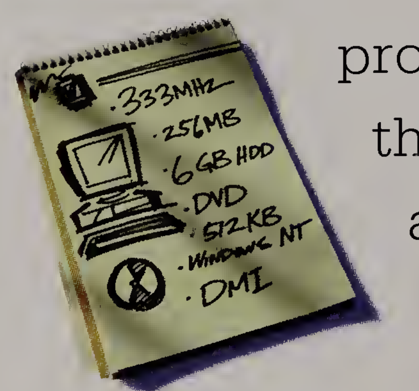
Premium Internet Services

PAGE 70

Replace motherbo
Then go on to perf

Introducing Toshiba's new Equium™ 7100 series with the Intel Pentium® II processor. Built into this new series is a unique Instant Access door that lets you reach the motherboard through the side of the chassis. No other computer maker has anything like it. Which means that without removing the monitor, this new patent-pending design lets you replace the motherboard in 30 seconds† Get in, get out, get back to work. This modular design is just one more example of how



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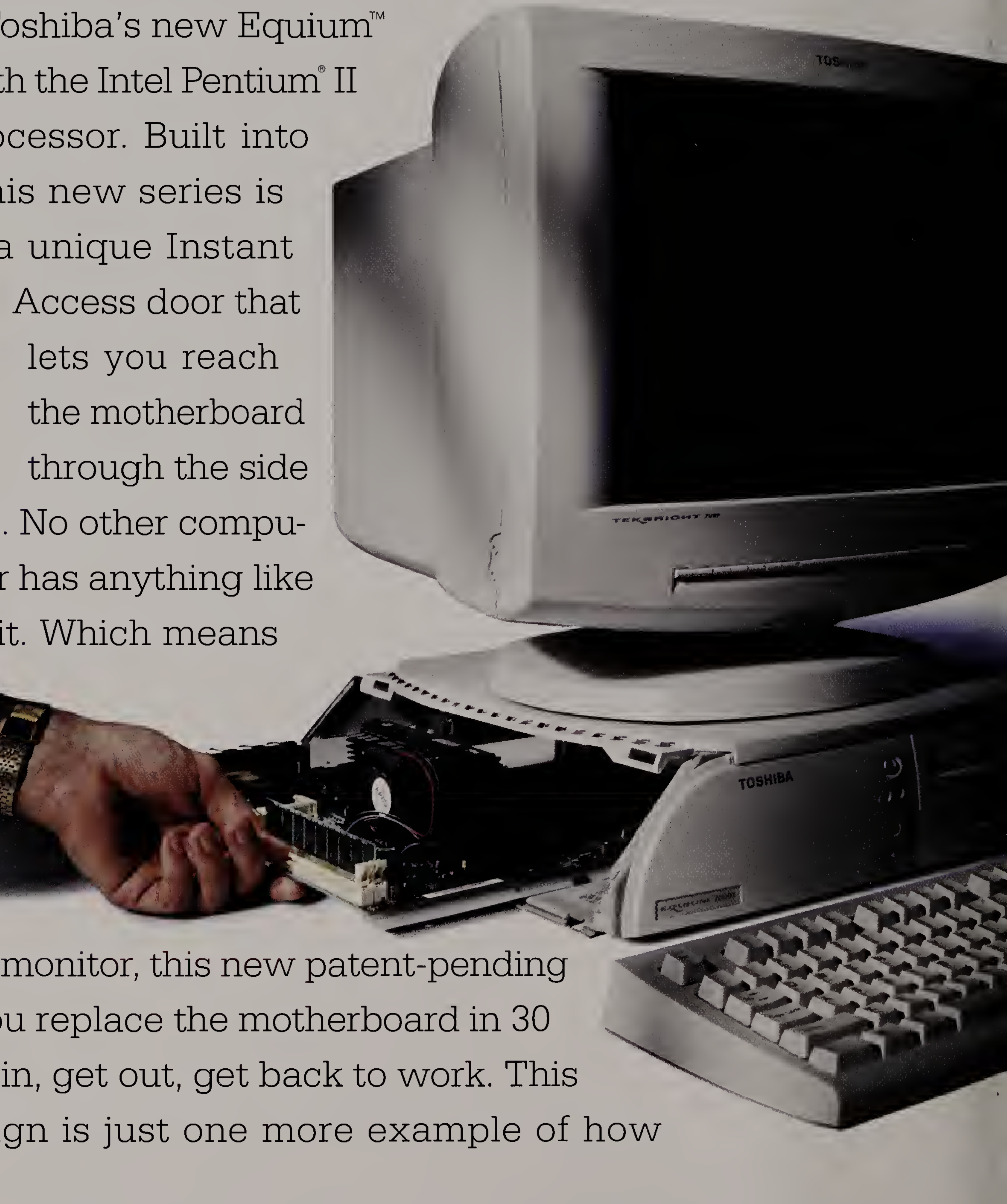

intel inside
pentium® II PROCESSOR

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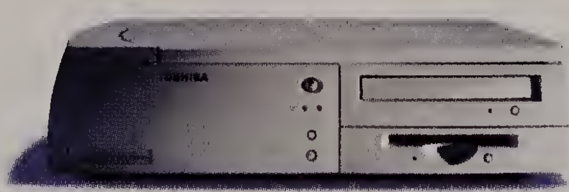

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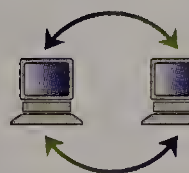

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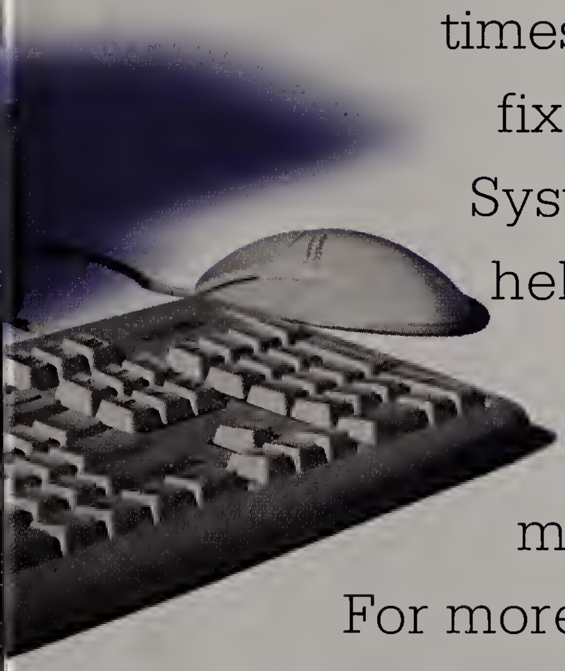

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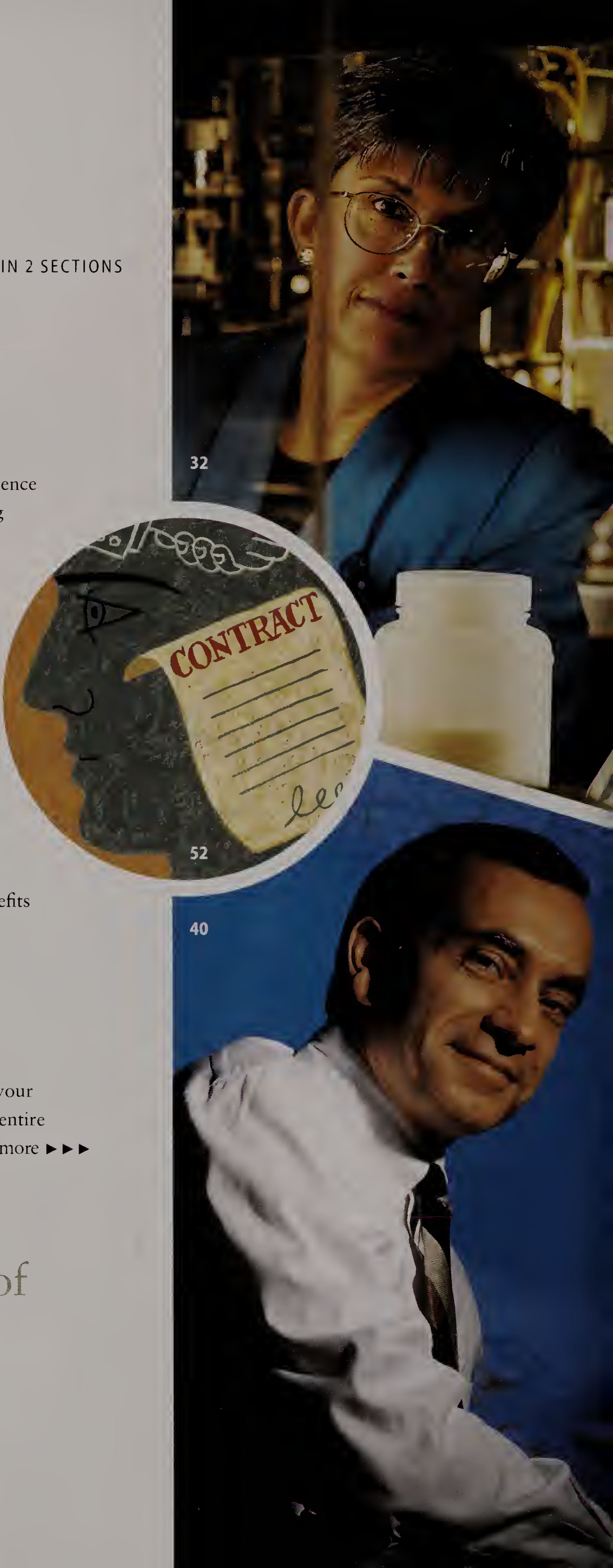

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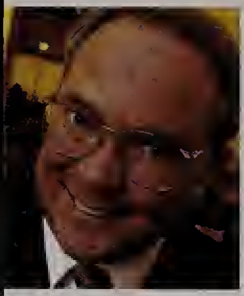

ON THE COVER

John Thomas Flynn, CIO of California, oversees the state's almost $2 billion IT budget.

Cover photo by Kent Hanson

Introducing The Quickest Way To Put Your Entire Enterprise On The Web.

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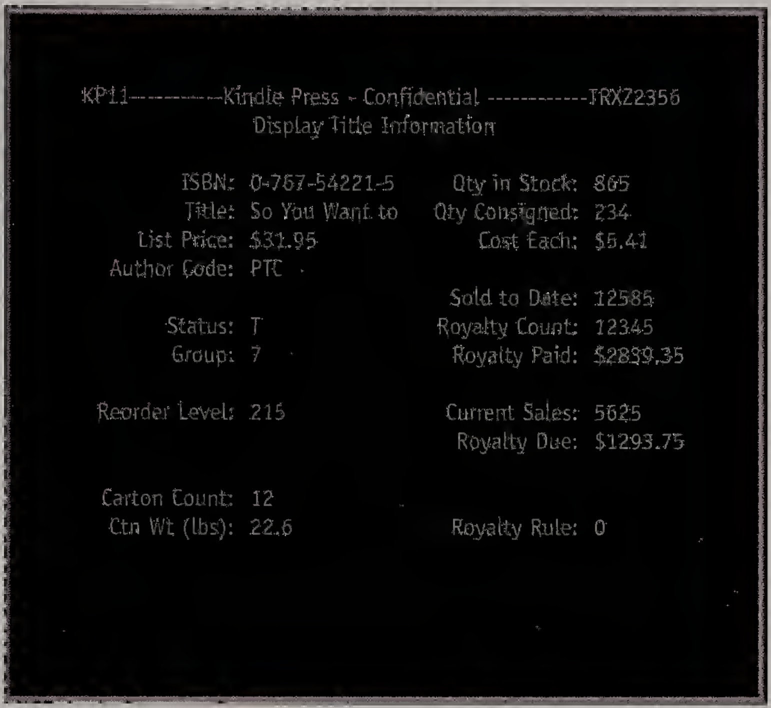

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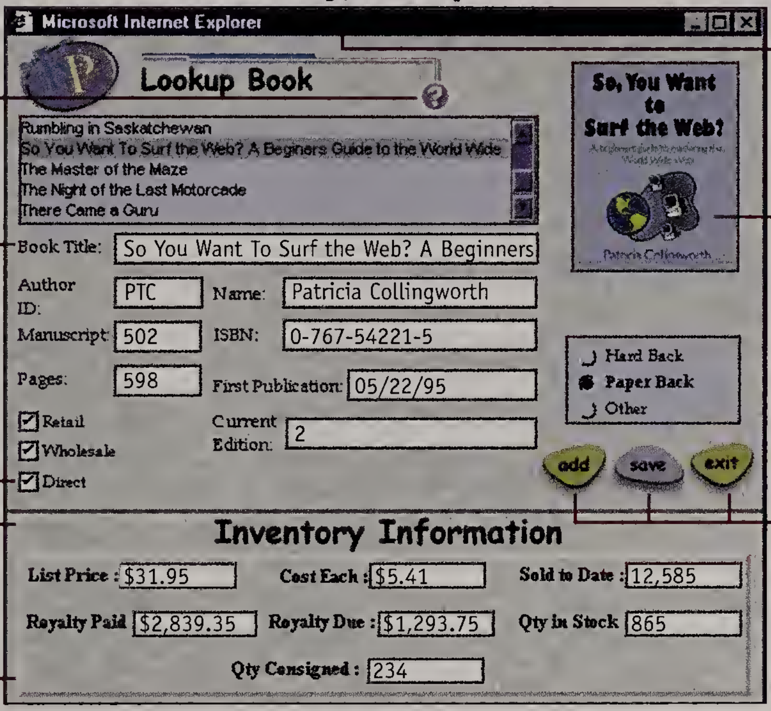

Rumbling in Saskatchewan
So You Want To Surf the Web? A Beginners Guide to the World Wide
The Master of the Maze
The Night of the Last Motorcade
There Came a Guru

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Data in the Sky • Automatic Dictation • Signature Software • Virtual Meeting Rooms • Handheld Stock Quotes

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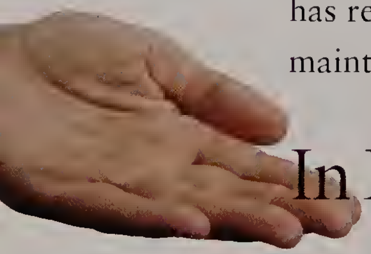
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MANAGEMENT TOOLS The balanced scorecard helps companies communicate, measure and stay focused on goals.

CASE STUDY EVALUATION A newly hired executive threatens an important IS project. How can the project manager snatch back victory?

ROUNDTABLE: THE INFORMATION REVOLUTION Forward-looking professors hold forth on how IT is changing the way the business world works.

REALITY BYTES Can courses without discourse really deliver education?

INTELLECTUAL CAPITALISM What does it take to be a successful CKO?

CHECKS & BALANCES Focus on some basic elements of physics to engineer the best performance from your IS department.

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In Box

LETTER FROM THE EDITOR, READER FEEDBACK AND HOW TO REACH US

CIOs are service providers: Their job is to serve the business needs of their line executives.

CIOs are leaders: Their mission is to provide strategic direction—in partnership with the CEO and other business executives—about how to leverage technology for business advantage.

Do you notice a contradiction here?

I'm just returning from the October CIO Perspectives conference in San Diego. In the course of speaking with lots of IT executives over the past three days, I was fascinated to hear different people argue both positions with equal conviction. That's because both have merit. On the one hand, technology only exists to serve the business, not the other way around. This is a fundamental principle that the service model would seem to support. In a service model, the business unit or department leaders determine a need or opportunity, tell IS what they want to do, and IS makes it happen.

There are a couple of problems with this. For one thing, the business never thinks with one mind; individual executives have different if not competing interests. And given that no one has unlimited resources, someone's got to referee.

Another problem has to do with infrastructure and standardization. Peter Drucker, who spoke at the conference, called today's information systems the worst technology "in the history of the world." Current information technology is inflexible, impossible to upgrade and way too complex. One of the toughest nuts for CIOs to crack is to elevate the long-term thinking about systems to a more holistic perspective (and to gain the outrageous amounts of funding required to get from here to there). There's no way that can happen in an environment where CIOs just do what they're told.

Finally, strategic systems by definition combine insight into the business with a close understanding of what technology has to offer, and most business people still haven't got that.

Whether a CIO should lead or follow depends on individual capabilities. An IT executive with a technology background and perspective who is not immersed in the needs, opportunities and competitive realities of the particular business cannot lead. Unfortunately, that organization will not have much of a chance of making it in an information-driven economy. Not unless the other executives in the company learn more about the CIO's job than the CIO. From what I've seen, this isn't going to happen anytime soon.

Clearly, CIOs must learn to resolve the seeming contradiction between service and leadership. Have you discovered a way to do this in your organization? Let me know.

Abbie Lundberg

Abbie Lundberg
lundberg@cio.com

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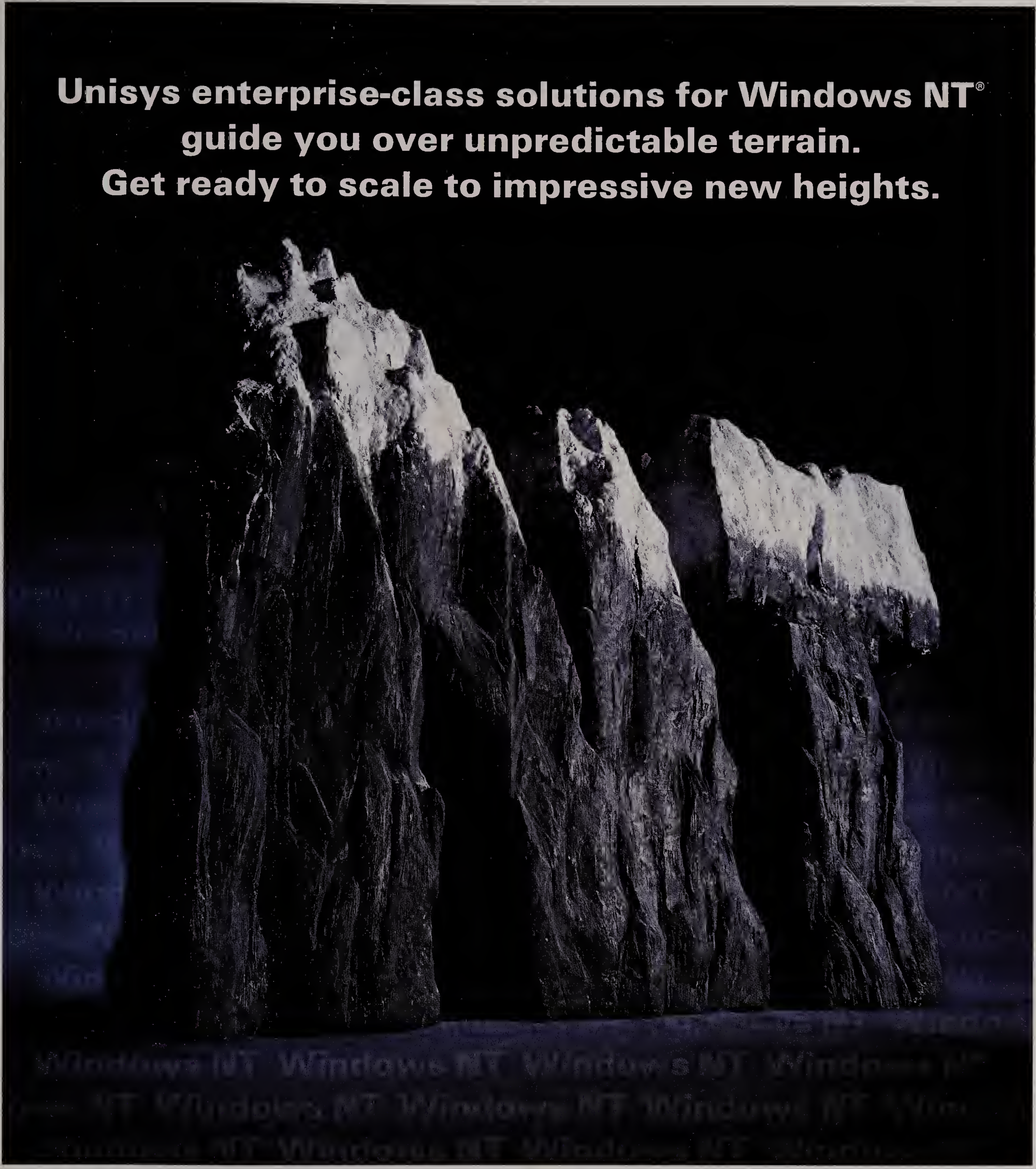
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GLOBAL WARNING

I found your article on global efficiency ["Team Heat," *CIO* Section 1, Sept. 1, 1998] absolutely correct. A former employer of mine nearly blew a groundbreaking multimillion dollar sale to a company in Germany by miscalculating cultural differences. My former employer made the classic mistakes of managing the global business wholly stateside, being blindsided by detailed German labor laws, acting culturally inept (wisecracking by U.S. personnel in the midst of crisis quickly alienated the Germans) and discounting the time zone difference.

As one of the few American employees stationed overseas, I was greatly embarrassed by my American colleagues. Ultimately, the company gave up and sold the European business to a European entrepreneur under license.

Dave Najarian
IS consultant
dave@najarian.net

HR THINKING

My value as an HR director has been challenged every day for 15 years. My challenge and charter will never be to produce static information as you describe ["HR Puff 'n Stuff," *CIO* Section 2, Sept. 15, 1998] but to provide real and meaningful assessment and recommendations supported by information that counts to our business. Giving managers the usual monthly or regular reporting data is a waste. Giving them information to effect quality decision making is essential. The executive who said HR "is just getting there" is to some extent correct. HR is not yet as formalized nor governed as finance or law, which can be benchmarked quite easily. I question if that's necessary for HR's future success.

Steve Schloss
smcastle@aol.com

How to Reach Us

E-mail: *letters@cio.com*

Phone: 508 872-0080

Fax: 508 879-7784

Address: CIO Communications Inc.,
492 Old Connecticut Path, P.O. Box 9208,
Framingham, MA 01701-9208

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EDUCATING THE EDUCATORS

I read your excellent article "Power Play" [*CIO* Section 1, Oct. 1, 1998] and would like to share my experiences collaborating with Southern Adventist University in Collegedale, Tenn. As a NASA civil servant currently associated with the Hubble Space Telescope project, I am on a team that has been tasked to reengineer the current control center. In May 1998 we were asked to comment on a new Master of Software Engineering (MSE) program created by SAU to offer courses geared to the expectations of industry and the federal government. The MSE is designed for "distance learning" while the individual is on the job. We were more than willing to help Southern Adventist with this program.

It is heartening to see that several universities are beginning to take the IT shortage seriously and are willing to endure the (sometimes painful) process of modifying their curriculum. The eternal philosophical struggle (as you correctly pointed out) for many educators is how to balance the desire to educate the whole individual with the more practical and parochial needs of private industry and government.

Kenneth Lehtonen
Project Lead
NASA Goddard Space Flight Center
Greenbelt, Md.
Kenneth.E.Lehtonen.1@gsfc.nasa.gov

CORRECTIONS

In "Build or Buy?" [*CIO* Section 2, Sept. 15, 1998], we misspelled the name of Pride International Inc. CIO Yvonne Donohoe.

In "Shop Talk" [*CIO* Section 1, Oct. 1, 1998], we misidentified The Metropolitan Museum of Art.

We regret the errors.

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Publisher's Note

Nine days, 5,000 miles and scores of conversations with CIOs, technology company CEOs and government leaders have laid out for me the future of computing. At least for the next 18 months.

Here's what I've learned.

Regardless of the product your company makes or the service it provides, information—what Peter Drucker calls "the energy of the mind"—will be your company's most important product.

Providing access to information for your employees and customers will be the most important service you can offer, bar none.

How quickly is information available to the key executives of your company? Does your present IT infrastructure allow you to answer your CEO's 9 a.m. request for up-to-date sales information for the past 24 hours by 10 a.m.?

Don't worry. We are heading into the era of Internet computing. The client/server computing era—where you had to query 250 global servers to answer the CEO's sales request—is dead. Or at least dying.

Internet-enabled personal computers linked to application servers linked to massive database servers are in.

When you signed up for a career in IT, I bet you never thought of yourself as providing a utility service. Guess what? You are. Information is more important to your company than electricity.

Internet-enabled computing has the potential to alleviate the IT workforce shortage. Here's my reasoning: As a company consolidates its information reservoirs from hundreds or scores to a more manageable number, companies will need fewer IT professionals to manage the database sites. What your company will need more of, however, is information workers who have key knowledge in manufacturing and in accessing information.

What about networking? Look again to the utility model. Voice communication in the 21st century will be free. Network providers will instead charge you by IP packet usage. IP networks are in. Voice circuit networks will die.

What's the key enabler of this new era of computing and networking? Bandwidth, bandwidth and more bandwidth. The days of the telecommunications industry hoarding bandwidth are over. There's too much competition on the horizon.

CIOs will be making the decisions outlined above. The pace is yours. Aren't these exciting times to be in this business? Good luck implementing the future.

Gary J. Beach

Gary J. Beach
gary_beach@cio.com

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Trendlines

NEWS, INSIGHT, HUMOR, REVIEWS

Edited by Katherine Noyes

Small World, Big Liability

COPYRIGHT LAW Seems the proverbial arm of the law has stretched out enough to reach into your wallet even overseas. A July 1998 ruling in the copyright infringement case *Los Angeles News Service v. Reuters Television International Ltd.* (Ninth U.S. Circuit Court of Appeals) extends liability for such infringement to include offenses outside the United States.

What does that mean for you? For the layman's translation, we go to Lawrence Dietz, director for information security and legal strategies at market research firm Current Analysis Inc. in Sterling, Va. According to Dietz, if a U.S.-based company illegally copies or distributes software to its end users and that activity continues overseas, the company's liability for damages now includes that overseas activity.

Previously, damages could be calculated only for the illegal copies inside U.S. borders. Even though the L.A. News Service case involved copyrighted materials other than software, the decision applies to IT cases, Dietz says. Employees distributing passwords to their French or Polynesian colleagues for copyrighted Web sites would be another infraction falling under the court decision.

"The court has put large end users of IT on notice that they must protect intellectual property or risk significant liability. Extending damages of a U.S. infringement to any overseas infringements heightens the stakes dramatically," Dietz explains. "A key point behind this Appeals Court decision is that the liability for international infringement damages is very likely to be several orders of magnitude higher than the cost of modest security precautions to minimize the threat of infringement."

Indeed, under the new ruling, an average damage award is likely to be three times as large as one in which the international factor is excluded, Dietz says.

For precautions, Dietz recommends not only electronic monitoring of software licenses but also keeping employees aware of the law and of the company's policy of using only licensed software—even to the extent of making employees sign a written agreement that they will comply with that policy. Dietz anticipates an uptick in the market for monitoring and security software products as a result of the case.

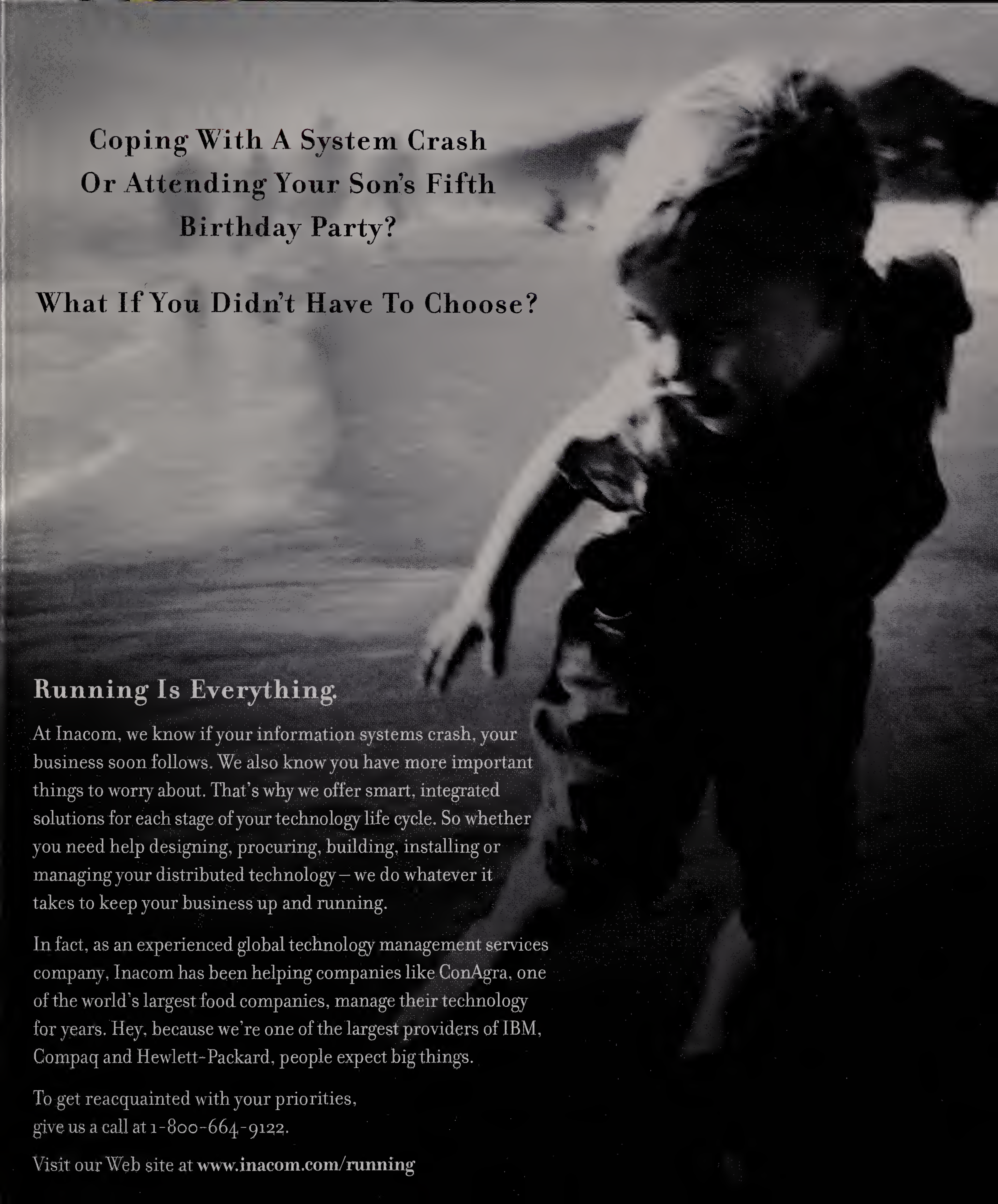
For more information, visit *www.currentanalysis.com.* ■

A Nose for Nitroglycerin

ILLUSTRATION BY DANIEL VASCONCELLOS

AIRPORT SECURITY Everyone knows that the skies airplanes fly in can be less than friendly at times, what with the threat of terrorists and bombs. But with the help of IT, airports are realizing new opportunities to protect aircraft and the passengers they carry.

At Sandia National Laboratories in Albuquerque, N.M., a project funded by the Federal Aviation Administration (FAA) is developing explosives-detection portals to ferret out potential bombs like the one that downed Pan Am flight 103 over Lockerbie, Scotland, in December 1988. The portals, which are about the size of current metal detectors, use nozzles to blow a continuous flow of air from ceiling to floor. The device then collects an air sample into a preconcentrator and sends it to shelf detectors, which test it for bomb components or suspicious chemical substances. "We're able to detect most explosives," says Kevin Linker, a mechanical engineer at Sandia National Laboratories and the project leader. In a two-week test, the portals received a 97 percent approval rating



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from passengers who stepped inside; the experience is fairly benign and takes only 12 seconds. "You feel a gentle airflow," says Linker. "The air nozzles puff air to ruffle clothes and dislodge anything you might have hidden." Researchers are hoping to make the devices available within the next two years and plan someday to integrate the chemical detector with standard metal detectors to reduce inspection times and get passengers to their gates more quickly.

Meanwhile, passengers who wonder if the people at the metal detectors whose job it is to screen baggage for forbidden objects are *really* looking at the suitcases can rest easier if they travel at any of the airports that employ baggage X-ray screening machines from Rapiscan Security Products. The company, which is a division of OSI Systems Inc. and is based in Hawthorne, Calif., uses "threat image projection" software programs to ensure screeners are on the ball. As screeners watch baggage make its journey through the machine, the software program can impose images of contraband on the screen so that it looks like the baggage actually contains it. (Is that a gun in her makeup bag?) "If the operator fails, the image is archived to a computer hard drive and can be reviewed by a supervisor," says Peter Modica, business development manager for Rapiscan. There are 40 machines in action worldwide, and the company is conducting trials with the United Kingdom's Department of the Environment, Transport, and the Regions, its version of the FAA.

Coming soon: IT figures out a way to scam the flight attendant out of a few extra bags of peanuts....

For more on IT in airports, see "The Flying Game," Page 24.

–Meg Mitchell

Off the Shelf

Learning from the Fruit Fly

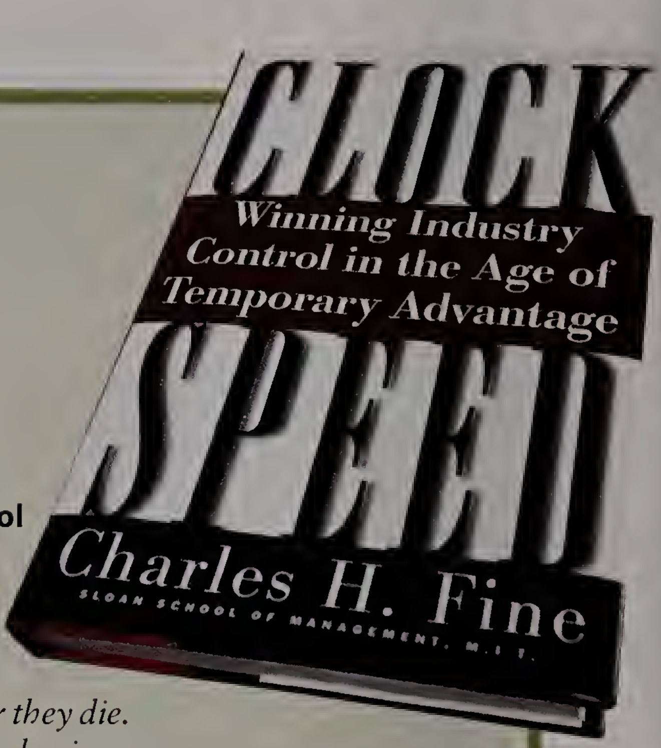
CLOCK
Winning Industry Control in the Age of Temporary Advantage
SPEED
Charles H. Fine
SLOAN SCHOOL OF MANAGEMENT, M.I.T.

PHOTO BY VITO ALUIA

Clockspeed: Winning Industry Control in the Age of Temporary Advantage

By Charles H. Fine
Perseus Books, 1998, $25

In the natural world, species evolve...or they die.
The same genetic imperative operates in business.

THIS OBSERVATION OPENS CHARLES H. FINE'S *CLOCKSPEED: Winning Industry Control in the Age of Temporary Advantage*, which combines a metaphoric analysis of changing business climates with suggestions for survival. "Clockspeed" is Fine's term for the rate of industrial evolution. "Clockspeed is to business genetics what life cycles are to human genetics," he explains.

Fine, professor of management and director of the Technology Supply Chain Research Project at MIT's Sloan School of Management, found inspiration for his book in the 1995 Nobel Prize in Medicine, awarded for research using that genetics-lab hero, the fruit fly. Because many fruit fly generations pass in a short time span, the fruit fly has been our master teacher in the field of genetics. If we could just identify industrial equivalents to the fruit fly, Fine thought, we could gain comparable insights into the "genetic" changes in business—that is, what would happen over "generations."

The quantification of clockspeed needs refining, Fine admits. But his research on rates of change in products, processes and corporate organization suggests that fields such as tobacco, shipbuilding and diamond mining are slow clockspeed industries; pharmaceuticals, fast food and bicycles are medium; and cosmetics, athletic footwear and personal computers are among the "fruit fly industries" with the fastest clockspeed. Watching the compressed generations of these industrial fruit flies lets us better understand or predict phenomena in all fields of business, Fine asserts.

Fine's driving metaphor—the dynamics of genetics and evolution hold true in business as they do in biology—works on many levels. Supply chains, for example, he likens to the protein chains of DNA. "By examining the 'molecular' structure of companies—their capability chains—business genetics helps us understand their mutation, evolution and eventual survival or demise," he writes. For example, Chrysler Corp. undertook an in-depth study of its own value chain in the early 1990s. Beginning with the Jeep Grand Cherokee, it stepped up the chain, evaluating the source of the Jeep's engine, its roller-lifter valve, the valve's precision-machined metal castings and the casting clay used in the foundry. Chrysler was shocked to find that the supplier of this last crucial element was about to quit manufacturing casting clay and start making kitty litter instead! This evaluation of "molecular structure" revealed what lay in Chrysler's future, much the way genetic testing can inform a person of a potential health threat.

Fine's book offers a useful framework for thinking about corporate success from an evolutionary standpoint. In doing so, it is at once entertaining, informative and thoughtful.

–Sandy Kendall

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Trendlines

The Flying Game

AIRPORT LOGISTICS The next time your plane gets stuck in a holding pattern tantalizingly close to your destination, think of Dimitris Bertsimas—and thank him. Chances are, your wait might be even longer without him.

Bertsimas, who is a Boeing professor of operations at MIT's Sloan School of Management in Cambridge, Mass., and a colleague recently developed a mathematical algorithm to help the FAA predict how complex systems like flight networks react to changes in variables like weather and time. A master of "discrete optimization," Bertsimas uses math to tell air traffic controllers when to hold a plane on the ground for 10 minutes, for example, so that three hours later, thousands of miles away, it won't cause another plane to wait in the air, using up extra fuel and resources and making passengers nervous.

Getting mathematics to be definitive—as in, "let the plane go now"—rather than approximate is not easy, and that's why Bertsimas and his colleagues get research grants from the FAA (which has not yet decided whether to use Bertsimas' formula) and lumps of cash from corporate investors. His golden algorithms, which are compact enough to run on an average PC, can add 2 or 3 percent to an airline's or hotel's top line, he says, sheepishly admitting that, "I am becoming a wealthy man."

For more on IT in airports, see "A Nose for Nitroglycerin," Page 18. ■

A Chip for All Seasons

EVOLUTIONARY TECHNOLOGY Forget what Olestra does for your potato chips. Consider instead what the work of some British researchers might do for your computer chips.

Computer scientists at the University of Sussex's Centre for Computational Neuroscience and Robotics (CCNR) in Brighton, East Sussex, are researching the viability of "evolvable" computer chips that can adapt to changing physical and computational conditions. The chips, which rely on evolutionary algorithms to configure programmable logic circuits, would be able to handle problems other than those for which they were originally programmed—a step further, perhaps, toward the creation of artificial intelligence. For example, one tone-discriminating chip was created to recognize and act upon the difference between medium- and high-pitched audio tones, and researchers report success in early experiments with chips designed to distinguish between the spoken words *stop* and *go*, proving their theory that sophisticated chips can distinguish between far more than just digital stimuli.

In the next stage of experimentation, scientists hope to develop a chip that can adapt to changing temperatures. They have already experimented with temperature fluctuation using commercially available Field-Programmable Gate Array chips; but, says Research Fellow Adrian Thompson, "So far, we only have interesting preliminary results." If successful, the innovation would lay the foundation for developing logic-based software applications that will be fault-tolerant in extreme and varying temperatures.

The ultimate goal is to create what Thompson calls an "extraordinarily robust" chip that can work under any physical condition, including a tropical rain forest or outer space. Programmers then could look forward to deploying computer applications that behave like ideal people: able not just to adapt but to completely reconfigure their functions when external conditions change.

For more information and updates on CCNR's "evolvable electronics" research, visit *www.cogs.susx.ac.uk*. ■

ILLUSTRATION BY DANIEL VASCONCELLOS

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Trendlines

This Is Your Brain. This Is Your Brain on IT.

QUOTES ON DRUGS The summer of love was 31 years ago, and for the life of us we can't figure out why drugs have become so prevalent *just now* when the subject of technology comes up.

July 9, 1998

"Technology and drugs are the only two industries that call their customers users."

–Universal Leaf Tobacco Co. CIO Tom Gmitter (and others, we're told)

August 10, 1998

"We're desperately hoping for a technological drug dealer to come along with a quick fix."

–Dee Hock, founder and CEO emeritus of Visa USA, in speech to the BrainStorm Group Inc.'s Year 2000 National Symposium in San Francisco

"I go through the same emotional mood swings as you do [about Y2K]. Maybe I should get industrial-strength Prozac to feel as good as everybody else about this."

–Ed Yardeni, chief economist for Deutsche Bank Securities, in speech to the BrainStormGroup Inc.'s Year 2000 National Symposium in San Francisco

August 13, 1998

"He likes me because he's a technology addict and I'm his dealer."

–A Sabre Technology Solutions employee, quoting a former coworker on his relationship with his boss

–Howard Baldwin

Scenes from a Mall

INTERACTIVE KIOSKS What better time to attract potential job-seekers than during their favorite leisure-time activity: going to the mall. Since June, Lausanne, Switzerland-based Adecco SA, a global employment services firm, has installed 50 interactive job search kiosks, branded Job Shops, in shopping malls in 18 U.S. markets, with plans to place them in an additional 200 sites by the end of the year. During August alone, three mall kiosks in Seattle generated a total of close to 4,000 applicants.

Based on a profile the candidate enters at the kiosk, including information about his or her education, experience and interests, software from Chicago-based Eagle River Interactive Inc. queries databases at Adecco's U.S. headquarters in Redwood City, Calif., for current job matches (all job openings in Adecco's client database for that geographical area are evaluated) and then distributes the profiles through a central server to Adecco's branch offices. If matches are found, a representative from a local Adecco branch calls the candidate within 24 hours. The kiosks have filled a variety of jobs, including clerical positions and high-tech professional openings. Says Adecco's Communications Director Bonnie Olmsted, "The kiosk lets us recruit people when our offices are closed."

The Job Shop is a free service to both job-seekers and Adecco's business clients. Debbie Pond-Heide, president of Adecco North America, would not reveal the costs of the kiosks but says that the number of new hires placed using them has already allowed the company to recover its investment at several sites: A Milpitas, Calif., kiosk, for example, paid for itself in three months. Adecco already has 80 sites in Europe, and it plans to expand beyond the mall frontier to colleges and job conventions. ■

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A World of Difference

Working closely with your international counterparts can pay off for the entire global enterprise

BY DEBBY YOUNG

IN 1991, NESTLÉ, THE SWITZERLAND-based global food manufacturer, mandated SAP as the enterprise resource planning (ERP) software standard for all business units worldwide. At a meeting of corporate CIOs six years into this long-term project, Nestlé Deutschland AG and Nestlé UK Ltd. executives reported that their SAP implementations were well ahead of schedule. Nestlé USA, however, was woefully behind. But rather than blow the budget by hiring a battalion of local programmers to work around the clock, Jeri Bender, vice president and CIO of Nestlé USA in Glendale, Calif., picked up the phone and called her fellow CIOs in Germany and the United Kingdom.

At Bender's request, the Nestlé UK CIO sent a three-person team of SAP Financials experts to spend a week helping her crew set up the Nestlé USA financial systems. "He also allowed me to recruit two of his staff who had worked on [Nestlé UK's] SAP project to come over full-time for an 18-month to three-year stint," says Bender. Now Nestlé USA is on the fast track for SAP implementation.

And Bender is now a strong advocate of CIOs leveraging the resources of their global peers. "Put your ego in your back pocket and acknowledge that maybe one of your peers can do it better than you," she says. Bender concedes that it is often humbling to have to ask for help—especially when you're CIO of the largest Nestlé market in the world. "But if you aren't willing to take somebody else's suggestion or offer, then you're really doing yourself, your staff and your company a disservice."

Bender is one of a growing number of CIOs in multinational corporations who value a close give-and-take relationship with their CIO peers around the world. Done right, these global relationships foster brainstorming and the sharing of resources and help avoid costly, redundant effort. The caveat, says Dean Foster, managing director of the Princeton, N.J.-based Berlitz Cross-Cultural Worldwide program of Berlitz International Inc., is that cultural differences among peers and their business units can sometimes lead to misunderstandings. To prevent the undermining of global initiatives, Foster warns that executives must recognize these differences or "they're going to be totally confused as to the behavior they're seeing." (For more on cultural challenges, see "Give and Take," Page 30.)

Sweet and Bitter

For Bender and her peers, global interaction presents an opportunity to elevate each other's expertise and negotiate the exchange of resources between markets. It's not unusual for Nestlé CIOs to lend their best and brightest to each other. "We all have the same issues facing us," says Bender. "When we start leveraging our resources, we don't just save money, we provide more quality solutions to the business than if we each tried to do it ourselves." Bender recently sent a team to Nestlé Canada Inc. to see what it had done with SAP Sales and Distribution. She sent another experienced team to help Nestlé Canada with its installation of SAP Financials. "We're able to do a lot more for a lot less because we're each willing to take the best of what the other has done instead of reinventing it ourselves," says Bender.

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Not all joint efforts, however, meet with success. Bender talks about trying to establish a common chart of accounts between Nestlé USA and Nestlé Canada. "We were two very similar markets facing similar business problems and going to install [SAP]. It made sense for us to eliminate redundancy." From a systems perspective, the joint effort was easily doable. But from a business perspective, it was impossible because there was no consensus between the two financial departments. "Until the business is ready to do business in a common way, technology cannot drive that change," says Bender.

Failure to cooperate can cost a company time and money. When Bender and her peers in Canada and Mexico tried to leverage procurement power for PC purchases, no one was willing to give up his or her current vendor. So each market continues to use different products for its desktops. "You would think that as CIOs that would be something we could tackle," says Bender. "And we tried. We just couldn't get agreement to change. It seems silly, doesn't it?"

Still, cooperation can solve problems a lot faster than going it alone. When Bender's IS organization came up short in an independent security audit, she called her CIO peers in Brazil, Canada and Mexico to give them a heads up on potential problems. Much to her chagrin, the executives told her that they had passed the audit with flying colors because they already had products in place to address those areas. They then rallied to Bender's aid with recommendations on proven tools and solutions to close the breach. "We took advantage of what had already been done in other Nestlé markets and went into high gear to fix things," says Bender.

No individual IS group is going to do things better than every other IS group all the time, Bender has learned.

"We all have the same issues facing us, so we try to solve them collectively," Bender says. "When someone has a solution, he or she lets you know about it. If you're a smart CIO, you pick up that solution and run with it."

Lending Credibility Long Distance

Bob Szambelan, a new CIO at Lend Lease Real Estate Investments Inc. in Atlanta, stepped into the role of executive vice president and global CIO for Australia-based Lend Lease Corp. Ltd. in April 1998. At the time, he definitely felt the pressure of being the new kid on the block. "I'm one of a number of hires that'll be happening in the next 6 to 12 months to put in the global IT infrastructure across the organization," says Szambelan. "I'm a business-unit-level CIO, but I have global responsibility."

With support and funding from his CEO in Atlanta, Szambelan has made a point of squeezing time from his busy schedule to cement personal relationships with his global peers. He has made trips to Australia to meet executives across different business groups. In the coming months he's scheduled to fly to Europe to meet his peers. "If you want to develop effective relationships external of electronic links, you need those face-to-face meetings where you can shake hands and look somebody in the eye. That really solidifies your peer relationships," says Szambelan. Only then, he says, can one start feeling comfortable about sharing war stories and best practices with a sense of common purpose. Since getting to know one another, Szambelan and his colleagues have set up a global collaborative "team room" application in Lotus Notes to share best practices, track status against common objectives and use a discussion database. "We held our first internal 'global' CIO forum in August," Szambelan says, with six other CIOs participating from London, Singapore and Sydney via videoconference.

Sharing solutions to common prob-

Give and Take

The better you understand your peers, the more productive your relationships will be

FOR GLOBAL PEER RELATIONSHIPS TO SUCCEED, you must understand your counterparts' views of the world, says Dean Foster, managing director of the Princeton, N.J.-based Berlitz Cross-Cultural Worldwide program of Berlitz International Inc. Here are some of his observations on working across cultures.

Decision making. In hierarchical cultures, there is a specific chain of command that must be involved no matter what the impact on project deadlines. In a more egalitarian culture, decisions usually rest with those who are closest to the problem. Learn the corporate hierarchy. Know to whom you can go and to whom you can't.

Meeting milestones. In the United States, time rules our activities. Elsewhere, time is more in the background. Look at project time lines as targets, not absolutes. Stay in close touch with your counterparts throughout the process. Place someone locally who can help solve problems and remind them of the project's priority.

Finding solutions. Some cultures are driven by results. Others are more process oriented. Be prepared to change how you present your facts and how much documentation you offer. If you're dealing with a process-oriented culture, you have to demonstrate why a particular result will occur. For peers in a results-oriented culture, you have to prove only that it works.

The rules. In some cultures, explicit laws govern every business interaction, from whom you can hire and fire to how expensive a gift you accept. In others, rules are made to be broken—sometimes in the form of under-the-table favoritism or outright bribery. Ethical dilemmas aside, when you know upfront that your peer comes from a culture that traditionally bends or breaks the rules, ask your senior managers how they want to proceed.

–D. Young

lems avoids redundant effort. For example, several months into his tenure Szambelan presented a case to his CEO and senior management for a dedicated Y2K project team in the United States. The Sydney-based global Y2K project manager joined Szambelan and shared his experiences of working with a dedicated Y2K team in Australia over the previous nine months. "He brought that knowledge to bear here in the States, along with my external knowledge," says Szambelan. "He added credibility to my recommendation." Szambelan believes the manager would not have done that if Szambelan hadn't been to Sydney to establish some rapport.

Szambelan and six Lend Lease CIOs from business units in Australia, the United Kingdom, Asia and Europe formed a global joint project team to share Y2K testing experiences and best practices. But, more important, they're using teamwork to address local software needs. "It's easier to get the vendor's attention when the seven of us are collaborating with a single voice than each of us putting our issues on the table," says Szambelan. The CIOs met and agreed on the internal milestones they needed to achieve to become Y2K-compliant by the corporate-set deadline. Then they brought in a third-party source to help the group identify the common denominators and the regional variations. Szambelan and his peers set up exchange programs to cross-train personnel, sending people from the United States to Australia and the United Kingdom for three- to four-month stints.

> **"If you aren't willing to take somebody else's suggestion or offer, then you're really doing yourself, your staff and your company a disservice."**
>
> *–Jeri Bender*

As CIO of the real estate investment arm of Lend Lease, Szambelan is just starting to understand the business problems facing his peers around the globe who specialize in real estate construction and insurance. "The complexity of doing things globally makes effective peer relations crucial," says Szambelan. "If we can't be effective peers, we won't be effective in the business. And in the long term the business won't succeed."

Debby Young is a freelance writer based in Framingham, Mass. She can be reached at dscribe@erols.com.

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Separation Anxiety

BY MINDY BLODGETT

Rhodia's sudden independence from its parent company made a reengineering process project screech into reverse

When a child comes of age and heads off for independence and a private fate, the process of letting go can be traumatic for both the child and the parent. Moving on to independence means taking on a host of new responsibilities such as finances, housing and personal relationships.

With corporate spinoffs, the pain for the information technology department can be similar. Breaking up systems, untangling networks, dealing with staff changes and facing tight deadlines dictated by the stock market all make a company spinoff or divestiture a challenge for IS.

Going It Alone

In spring 1997, IT staffers at the Cranbury, N.J., specialty chemicals division of Paris-based Rhône-Poulenc SA were just finishing a massive, three-year reengineering project when the announcement came that the division was to be combined with the fibers and polymers divisions and spun off into a partly separate company called Rhodia. Raising capital was the main business driver for Rhône-Poulenc, a global conglomerate in the life sciences, including human, plant and animal health as well as in specialty chemicals. The semi-independent Rhodia was to become a leaner, meaner organization better able to compete in the increasingly fast-paced chemicals industry. Through the initial public offering, Rhône-Poulenc raised almost $250 million, which it used to pay down debt.

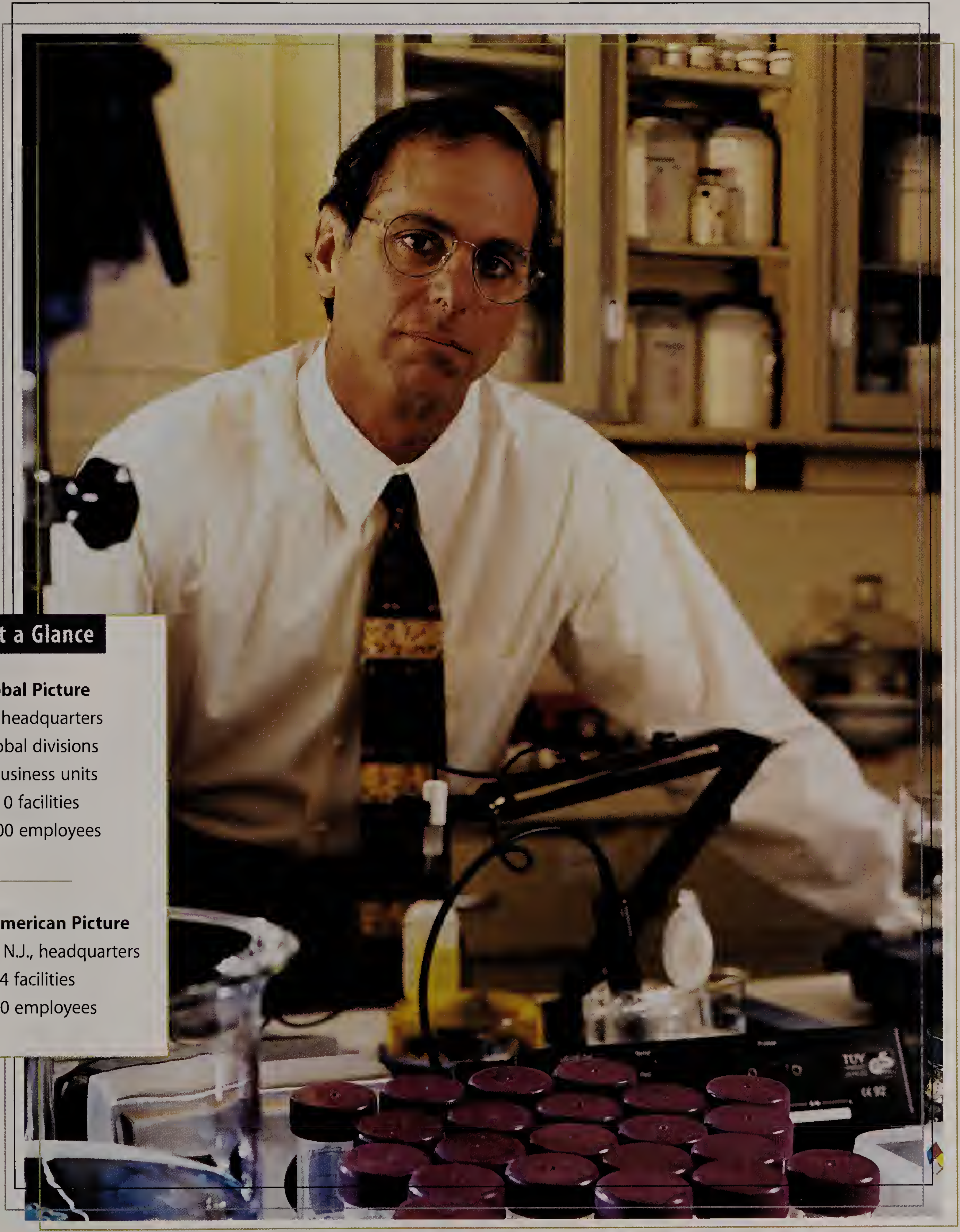
Reader ROI

THIS ARTICLE PROFILES THE EFFECT OF partial divestiture on IT for one chemical company. Learn how you can

- Bring once-shared systems back under single company control
- Support a switch to a more global, enterprise-oriented system
- Grapple with changing vendors

On Jan. 1, 1998, Rhodia began operations as a 30 percent publicly owned company and six months later began trading shares on American and French stock markets. Rhodia split into six divisions, with its worldwide headquarters in Paris and its North America headquarters, under the name Rhodia Inc., in Cranbury, N.J. Free of the diversified world of Rhône-Poulenc, Rhodia can funnel more of its profits into its own business rather than share them with Rhône-Poulenc. The new company's business strategy is to foster an entrepreneurial, enterprise system among the business units. Being a smaller company, Rhodia is better able to implement these strategic goals.

Since many chemicals industry competitors in the past few years have either merged, divested or been engaged in acquisitions, the spinoff announcement should not have come as a complete surprise. It seemed to be just a matter of time before Rhône-Poulenc joined the game. For instance, in 1997 Ciba Specialty Chemicals Inc., a Swiss chemicals company, split off completely from Ciba-Geigy AG (see "Born Free," Page 38). But Rhône-Poulenc's timing, so close on the heels of the reengineering project, caught IT off-guard. As IS listened to the news that a spinoff was in the offing, the reaction was "stunned silence," according to Wilma Harris, director of client-vendor relations. Marc Green, vice president of information technology, agrees that the news was a jolt. "Reengineering



PHOTOGRAPHY BY CHRIS CASABURI

Rhodia at a Glance

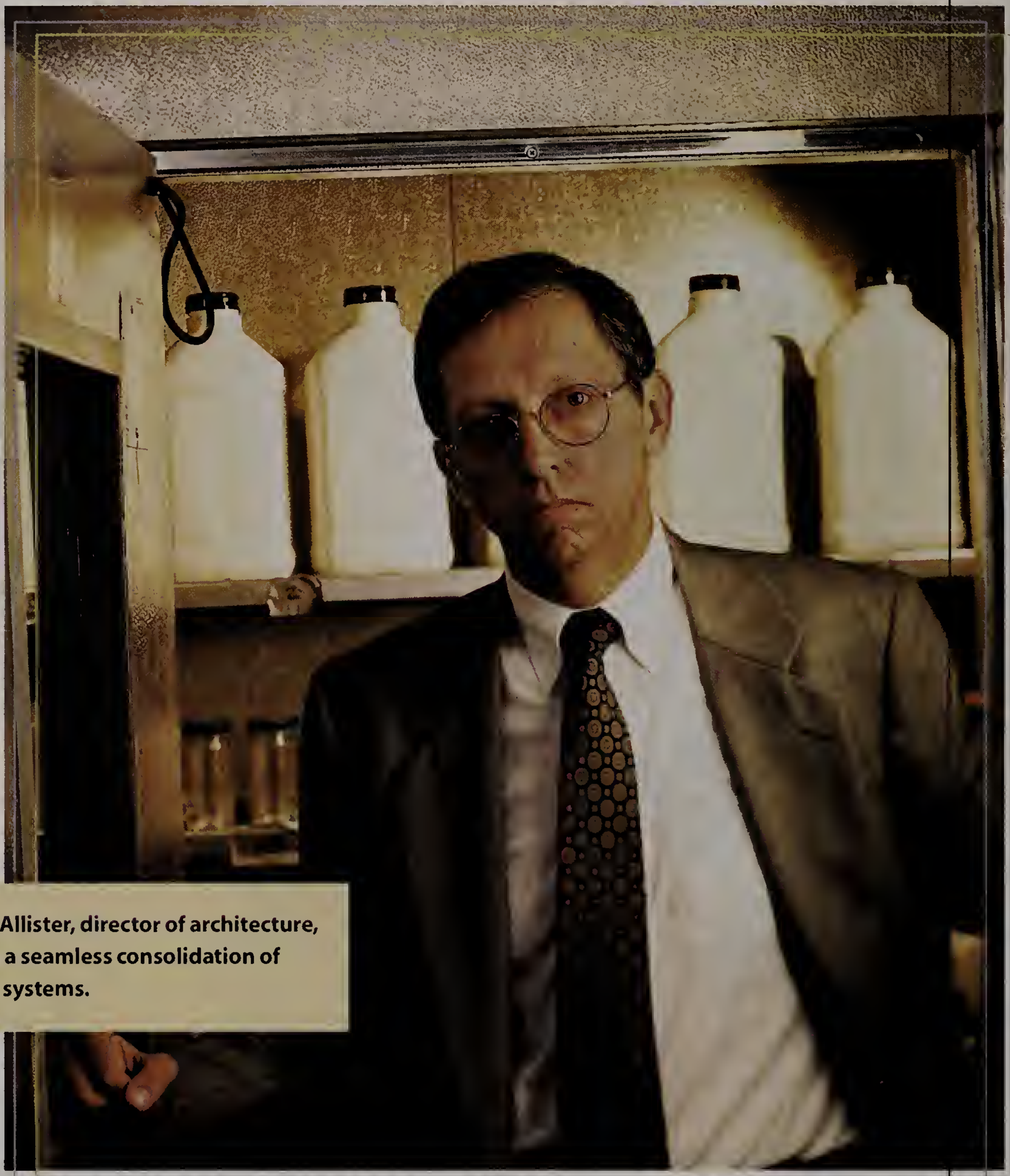
Global Picture
Paris headquarters
6 global divisions
28 business units
110 facilities
26,000 employees

North American Picture
Cranbury, N.J., headquarters
34 facilities
3,500 employees

Marc Green, vice president of information technology, stopped projects to deal with divestiture fallout.

is a rough ride," Green says. "You have to just hang on. [IS] was asked to support a spinoff that was only months away. It was a real challenge because in the midst of the chaos that ensues at the end of a reengineering, we had to embark on something new."

Complicating the effect of the spinoff was the idea that the new company's business focus was to be global, an about-face from the decentralized, geographically based business unit it was when 100 percent owned by Rhône-Poulenc. The IT department in Cranbury, N.J., which had focused only on North America, would now join with headquarters in Paris to serve global customers. And although Rhodia had spent years reengineering systems in an effort to tightly link its services to Rhône-Poulenc, it would now have to untangle those systems and business ledgers and rewrite vendor contracts. "We made a huge investment in core systems [that] were based on shared systems during the reengineering," says Myron Galuskin, president of Rhodia Inc. "Now financial reporting is consolidated globally, with each business unit [functioning] as a global business unit." With a new decentralized structure, the company is divided by function into six separate enterprises.



Randy MacAllister, director of architecture, supervised a seamless consolidation of messaging systems.

But since Rhodia did not split off completely from Rhône-Poulenc, there was no need to build systems completely from scratch, as is necessary in some divestitures. Rhodia Inc. held on to its computer hardware and data warehousing system, for instance. However, to get closer to global customers, it needed to separate certain systems as well as align IT with the new business plan.

"Our IT strategy is aligned with the strategy of the new company," says Jean-Michel Le-Neve, CIO of Rhodia. "[Because] Rhodia is made up of independent and decentralized enterprises that do business on a global basis, we had to place an IT leader in each enterprise." Le-Neve says that IT utilizes flexible, global application architecture.

System Changes

A data integrity task force, composed of IS and business unit representatives, was set up when the spinoff was announced to ensure that the accounting systems would work after the changeover. IS had to make sure that the purchase price systems of two divisions could be coordinated and were compatible. The business ledgers—the systems that contain the business rules that govern transactions for accounting purposes—are run by a former sister division, Rhône-Poulenc Ag Co., located in North Carolina. In reconstructing the ledger system, Green says that programmers who had just worked on code to more closely link Rhodia and Rhône-Poulenc now had to do exactly the opposite and write code to break things apart. All the programmers had to work overtime, Green says. "It was a nightmare. We had a target date—Jan. 1, [1998], when the IPO was due—that couldn't move. We had to go to the business side and tell them we needed information on accounting immediately. Everything [in IT] had to be frozen. Projects stopped so that we could deal with this issue." The new system had to satisfy the data integrity requirements of both the business side and IS. It also had to stand the scrutiny of auditors analyzing the system before the public offering of the new company's stock. The data integrity task force worked for three months to meet its goal of having the business rules written by September 1997. The team met its goal, and the system tested out accurately.

A second important system that needed to change immediately was e-mail, according to Randy MacAllister, director of architecture. IS needed to change all e-mail addresses because the domain names changed, a process that called for changing all user registrations. While some internal customers complained about the changes, MacAllister calls the switchover seamless. The smooth

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transition was accomplished by allowing users to keep two addresses for several months. "We had no idea how imbedded the Internet had become in our business," Green says. "Our internal customers let us know that changing addresses was no small matter."

Yet another challenge posed by the partial divestiture was the need to reexamine Rhodia's relationship with its vendors. Harris says, "Many of our contracts no longer made sense because they were scaled to our old enterprise. Our new entity needed more flexibility." Harris says that Rhodia set up a vendor task group to work with a consultancy, Aligne Inc. in King of Prussia, Pa., to help the company sort through its key vendor relationships and contracts. The task group comprised six people: four IT members, including team leaders specializing in asset management, operations and networks; an attorney, to ensure that no agreements were violated; and a purchasing manager. Many contracts were rewritten, and Harris says the process is ongoing. The group met at least weekly because the realignment of contracts was so important. "It was almost a full-time job," according to Harris. "We're also looking at whether we should do more systems outsourcing or manage more in-house as part of this look at our vendors," Harris says.

Green says that now that Rhodia is no longer part of a larger entity, "there is more accountability, more intensity associated with having a drop-dead deadline." At the same time Rhodia was redesigning business systems, Green says that IS had to consider the implications of meeting year 2000 requirements. That process is still underway, with all business systems expected to be Y2K compliant by next year at a cost of somewhere between $3 million and $4 million.

Measuring Success

Following the spinoff, other IS teams embarked on benchmarking and strategic planning processes aimed at setting goals for the future. The company's IT executive steering committee, which consists of the general managers of the business units along with IT managers and is headed by Green, is examining the use of technologies such as data integrity and application development.

"We have a new set of bosses. The feeling is that they care about the IT portfolio and about cutting costs, and they are relying a lot on benchmarking to tell them where to do that," Green says. The Hackett Group Inc., a Hudson,

Successful IS Divestiture

Some steps to take and hazards to avoid

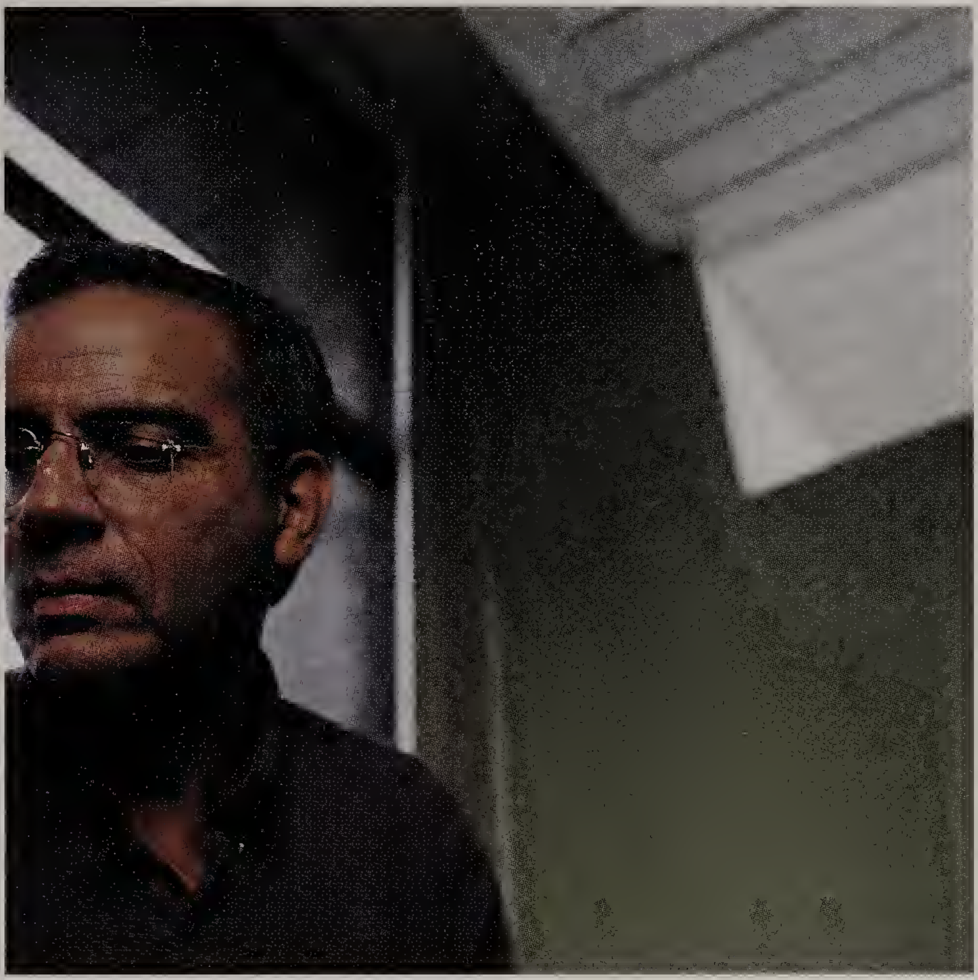
FRED MAGEE, A VICE PRESIDENT AND RESEARCH DIRECTOR IN THE management of technology group of GartnerGroup Inc. in Stamford, Conn., agrees that a divested company is a bit like "a baby going out into the world. The new company has to learn to do everything itself and there are many questions that need to be answered," Magee says. "What is the pace of the divestiture going to be? How long and to what extent will [the new company] be tethered to the old?"

Best advice?

- Plan carefully. "The unhooking of systems is a big deal," says Virginia Reck, executive vice president of the Kendall Consulting Group Inc. in North Andover, Mass. "Some companies get burned on mergers and acquisitions because they try to operate the business on a new set of systems, and they run into problems."
- IT and the business side need to work closely to ensure the new systems are on track for supporting the new business plan. "Who are your new customers and what promises have been made to shareholders?" Magee asks.
- Don't underestimate the money or the time required to get a new company's systems up and running. "The mistakes that are made are often in underestimating the number of people it will take to make the transition to new systems smooth and the amount of money needed to build up new systems," Magee says.

–M. Blodgett

Wilma Harris, director of client-vendor relations, faced the task of rewriting contracts that no longer made sense.



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Ohio-based consultancy, found that the number of calls to the Rhodia help desk was double the average of other companies it had benchmarked and that the company was comparatively lacking in technology standardization. Rhodia's end-user computer cost was high, about $10,000 per user, as were its overall IT costs. When the company first benchmarked itself on customer service three years ago, "our [internal] customer service rating was very poor," Green says, although more recent benchmarking shows that the company is improving.

Part of the problem arose during the reengineering effort and the subsequent drive toward supporting the spinoff when the key job of serving internal customers fell to the bottom of the priority list. Such issues as training employees on the new systems suffered neglect, says Green. On the positive side, Green points out that 77 percent of Rhodia employees have computers, a larger percentage than the industry average. Only three years ago, less than 20 percent of Rhodia employees had computers. "We had this big leap, which is good, but education fell by the wayside. We fell short on training employees on the new systems," says Green. "So our second big goal, after cutting costs, is to do better at serving our customers," he says.

Green believes that the new company's help desk woes are not due to the divestiture. But he says, "divestiture pulls the rug out of sharing superstructure [computer] costs." Competing demands complicate IS's drive to improve its help desk. Green adds that it may be difficult to cut costs while seeking to standardize technology for Rhodia. Being entrepreneurial, "the businesses want flexibility to pursue their goals," Green says.

Many problems remain, such as the fact that Rhône-Poulenc Ag still manages Rhodia's general ledger. "Essentially, a former sister division is now a vendor," Green says. "And they are charging us good money for the service. These are the kinds of things we still need to sort out." And Le-Neve says that some specific changes are on the drawing board for Rhodia, including continuing to install SAP in business units as needed and moving the company's e-commerce capabilities beyond the prototype stage. "The relationship between Rhodia and its customers and suppliers will change in the next few years via the use of intranets and extranets."

As the IT executive steering committee eyes the company's future IT efforts, Green says, "Our whole way of functioning is changing. Now the business units have to make the case for, say, a data warehousing project, if they see the need for it. The business units have to be much more aggressive with their IT needs and much more involved in the technology." MacAllister agrees. "We have to learn to move quickly in conjunction with our enterprises. The name of the game is flexibility."

Senior Writer Mindy Blodgett can be reached at blodgett@cio.com.

Born Free

Rebirth as a smaller, more independent entity can increase productivity and creativity

BECOMING A STANDALONE company after existing as just one piece of a larger whole can bring a heady taste of independence. Ciba Specialty Chemicals Inc., based in Basel, Switzerland, became a completely independent company after splitting off from Ciba-Geigy AG in March 1997. Just 10 months after the spinoff, Ciba Specialty's stock had gone up 46 percent, a trend followed by other specialty chemicals spinoffs.

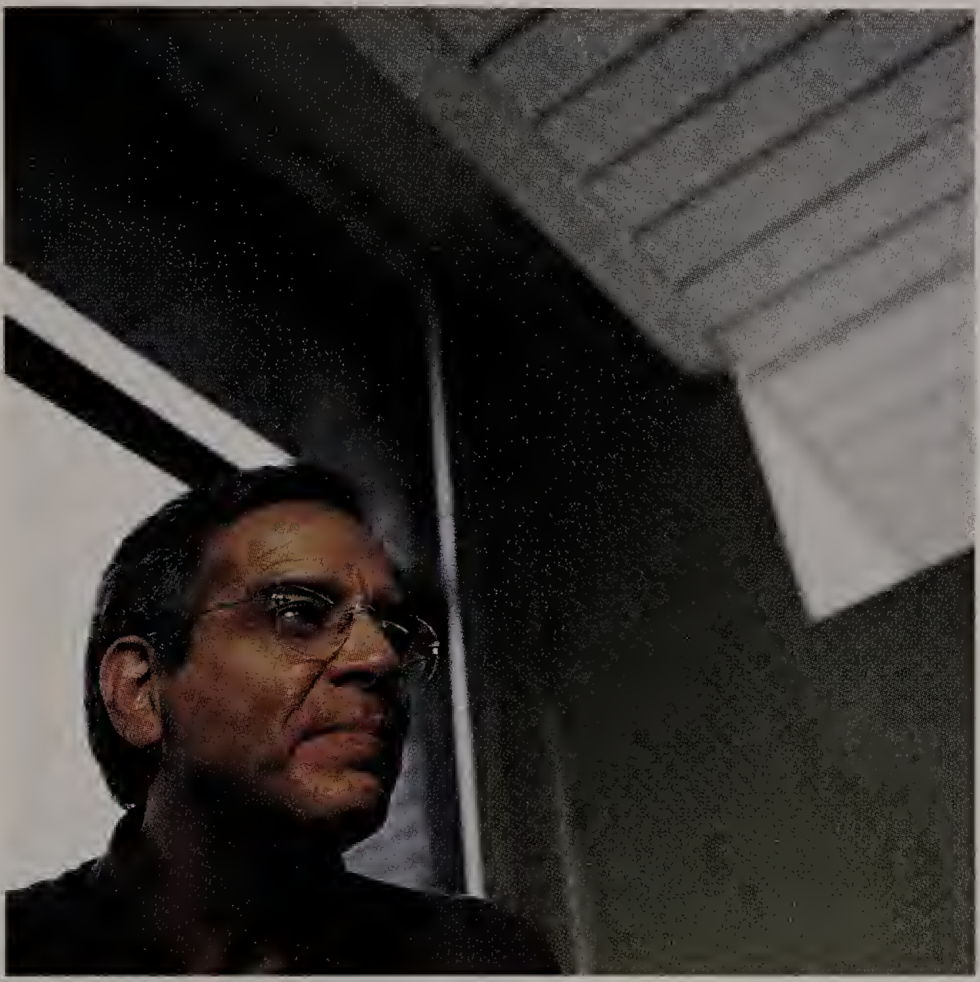
Companies often face a strict deadline for untangling systems before the stock of the new company goes public. "We had 18 months to become independent," says Werner Grab, the CIO of Ciba Specialty. "It was a big, big challenge to uncouple everything in time and to build new systems." Grab, who had been the director of applications maintenance and enhancement at Ciba-Geigy, says one of his first decisions turned out to be one of his best: He appointed an information management steering committee made up of IT managers from each of the business units of the new company. This decision-making committee would oversee the building up and tearing down of systems between the announcement of the spinoff and the day the new company went into business. It set and enforced standards during the spinoff process and decided which systems were redundant or were needed in the new company.

Grab says the new systems were divided into two areas: new infrastructure and new applications. For instance, in the area of new infrastructure, the company built a new frame-relay wide area network using the services of Digital Equipment Corp. (now Compaq Computer Corp.) for engineering, migration and operation. IT also built a local area network for its new corporate headquarters in Basel and began migrating servers and desktops in Ciba's worldwide offices to Windows NT. The company also had to build new companywide applications, including ones for its financial reporting and supply chain systems. And several e-mail systems were reduced to one: Microsoft Mail.

The new company is relying much more on selective outsourcing than it did when it was part of Ciba-Geigy, Grab says. This is a big cultural shift from a model in which "we had to have the know-how in-house." The new company's IT has also shifted its focus from programming to more of a business focus, "so that we could roll out the financial system hand-in-hand between IT and the business side."

The spinoff was exhausting, Grab says, but also exhilarating. "We used to have people here in information management who worked pretty much 40 hours a week," Grab says. "But now they work longer hours to make a difference."

–M. Blodgett



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File server speed data from 1998 Mindcraft, Inc. study.

John Thomas Flynn, *CIO of California, is unafraid of killing a project gone bad.*

Odd Ducks No More

Public sector CIOs are now key players in the reinvention of government

BY PETER FABRIS

After a successful reelection bid in 1994, Massachusetts Gov. William Weld offered John Thomas Flynn a job in his administration. Flynn, an experienced IT consultant and longtime Weld supporter, told the governor that he wanted to be the state's first CIO. "The job is yours," Weld responded. "CIO...What's that?"

Today few government executives ask for a definition of CIO. Federal, state and local leaders see the position as essential for reinventing government. Cross-departmental financial and administrative systems, intranets and electronic commerce systems can boost customer service in government and save tax dollars. Who better to advocate and implement such initiatives than a CIO?

But while many public sector CIOs share similar goals, the role is evolving differently in different locations. Some must overcome a history of monumental project blunders and focus their attention on IS governance and oversight. Others are zeroing in on consolidating network infrastructures to prepare for ambitious reengineering agendas. Some spend the lion's share of their days huddling with agency heads to reinvent government processes and services. Still others are concentrating on taking advantage of the Internet to offer electronic government services. Most government CIOs deal with all these issues and more to some degree, but the emphasis varies greatly and the CIO title in one locale can mean something different in another.

But despite an increasingly crucial role, the CIO position in government is so new that neither elected officials nor the public has stamped *success* or *failure* on it. The government CIO post is still in a "honeymoon period," says Jerry Mechling, director of strategic computing and telecommunications in the public sector at Harvard University's John F. Kennedy School of Government in Cambridge, Mass. But the honeymoon, in which many elected officials look to CIOs to shake up bureaucracy, may not last much longer. "After a while, other things will capture the attention of high-level officials," Mechling says. Those pioneering the public sector role today will have a lasting impact on how IT is used in government in the future. Early successes will cement the CIO post's stature for many years to come; high-profile failures will weaken the office.

Reader ROI

THE GOVERNMENT CIO ROLE IS STILL new, but interesting patterns are emerging in its evolution. Readers will discover

- How public sector CIOs are faring
- An analysis on what elected officials and the public expect
- Government CIO strategies on Y2K, the Internet, network consolidation and project management

PHOTO BY KENT HANSON

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But even if public sector CIOs do not fulfill every objective, it's likely that they will have a demonstrable impact. Whether it's using the Internet to deliver services less expensively and more conveniently, surviving the peril of Y2K, allowing multiple agencies to function more cohesively by devising a common network infrastructure or reforming project management practices, today's crop of government CIOs truly has the opportunity to reinvent government.

California Watchdog

California, the most populous state, spends about $2 billion on technology annually; $100 million IT projects are common. Managing large projects requires expertise that's hard to come by in the private sector, let alone the lower-paying public sector, and that shortage is acute in California's state government. Before Gov. Pete Wilson appointed Flynn, the former Bay State CIO, to be California's first CIO in 1996, a dearth of project management expertise contributed to a series of highly publicized failures, including a notorious $50 million Department of Motor Vehicles boondoggle. "There has never been a major project completed on time and on budget here," Flynn laments.

Most problems stemmed from a lack of management accountability.

Massive projects failed for a variety of reasons, but most problems stemmed from a lack of management accountability, Flynn says. The DMV system, a project that seemed to have no clearly defined leader, proved that, he says. Before Wilson established the CIO post, nobody had supreme authority for IS management statewide. Flynn now has that authority and hasn't hesitated to use it. He's canceled some troubled high-profile projects, including a $100 million statewide system to track deadbeat parents and a $40 million prison inmate tracking system. Pulling the plug on such expensive, ambitious systems is fraught with political and professional risk. But halting foundering projects is one of the main reasons Flynn was hired, and so far legislators have supported him.

Finding It Online

California Dept. of Information Technology
www.doit.ca.gov

New Jersey Office of the CIO
www.state.nj.us/cio

U.S. Dept. of Defense
www.defenselink.mil

Federal Y2K Report Card
www.house.gov/reform/gmit/y2k/980909.htm

City of Seattle's Technology Division
www.ci.seattle.wa.us/esd/techhom.htm

For example, Assemblywoman Elaine Alquist, chairwoman of the California Assembly's Committee on IT, was an outspoken critic of the deadbeat parent tracking system, citing its technical and managerial problems. In February 1997, about a year after Flynn began his stint, Alquist issued a press release giving the CIO a grade of Incomplete for his job performance. But she publicly praised Flynn's November 1997 decision to phase out the troubled system and build a new one from scratch. Flynn and the Wilson administration laid much of the blame for the project's failure on Washington, D.C. Federal regulations regarding child support changed during the project's development, a shift that put too great a burden on the state's project, Flynn says.

No matter what the circumstances, publicly admitting that the state spent a bundle on a system that won't work, while fiscally responsible, garners plenty of criticism from the media and public. In order for Flynn to take the risky but sometimes necessary step of killing a project, he needs support from the legislature, which has ultimate responsibility for approving IS funding. So Flynn strives to keep legislators informed and to be honest with bad news. "Full disclosure with the legislature is really critical," he says. Some projects require Flynn to file regular system progress reports with legislative committees, and he is frequently invited to testify at oversight hearings, particularly around budget time. Still, criticism abounds. For instance, the IT-savvy *San Jose Mercury News* reported Flynn's criticism of federal regulators over the deadbeat parents system debacle; nonetheless, its report was highly negative regarding the state's IS management capability. So far, most media criticism has not been directed at Flynn personally. Newspaper accounts have blamed an institutional ineptness for project failures. Perhaps that's due to the CIO honeymoon period factor. Eventually, though, critics will likely direct their ire at Flynn himself if big money projects continue to go belly up.

Flynn's most notable accomplishment is the implementation of a rigorous oversight process on all major projects that include auditing during development by a third-party consulting firm. That strategy is already paying dividends.

In May, for example, TRW Systems & Information Technology Group of Fairfax, Va., forfeited a $10 million performance bond and agreed to pay the state Department of Corrections an additional $8 million to settle a lawsuit filed by the department for breach of contract on the ill-fated prison inmate tracking system. This was the first time the state has collected money from a contractor for a failed IT project, Flynn says. The settlement came after Logicon Inc., a Torrance, Calif., consulting firm charged with project oversight, spotted major problems during development. The issue ended up in court, but the two parties settled before it went to trial. TRW declined to discuss the specifics of the dispute with the state, but a spokesman said the project created uncommon acrimony between the two parties. "It's unusual for an issue like this to get to court," says Al Frascella, manager of public relations for TRW. Hiring an independent firm to audit projects, a fairly unusual strategy, not only provides necessary project management expertise but also adds impartial analysis.

In the past, state project managers were reluctant to pull the plug on projects that they managed. Impartial oversight helps remove the stigma of stopping a project, which could appear as a personal failure, Flynn says.

Flynn now requires contractors to finish phases of a project before they receive payment. He vows that the state will no longer spend millions on multiyear projects without imposing milestones. But his success depends more on making large IS projects successful than on halting doomed ones. So Flynn aims to develop project management skills within California's IS ranks. State IS managers can participate in a training program at the University of California at Davis and attend training seminars, which are being developed by Flynn's department in cooperation with the IEEE Computer Society, on the state's dime.

Flynn has as clear a performance yardstick as any government CIO can hope to have. He must prove that the Golden State can successfully complete large, mission-critical projects. His task is a universal CIO challenge, particularly in the public sector, which tends to have less experienced staff than private businesses.

Defense Man

During a tour of Bosnia in November 1997, Marvin Langston, deputy CIO for the Department of Defense, was struck by the ubiquity of computer networks even at remote, isolated locations. "Wherever you go today, people are setting up networks to support operations," he says. Indeed, IT gains more prominence in the armed forces every year. (See "Armed with Intelligence," *CIO*, August 1997.)

But the Defense Department maintains a vast arsenal of legacy systems, making the millennium

Cityside

IT projects that support police forces, fire departments and schools directly affect citizens' lives

Seattle's CTO **Lynn Jacobs** *works with nonprofit organizations to bring IT services to the needy.*

LYNN JACOBS, FORMERLY CIO at Dream Works SKG, the digital studio startup founded by Steven Spielberg, Jeffrey Katzenberg and David Geffen, left the studio to be closer to an ailing family member. Jacobs, a Seattle-area native, had more lucrative offers from private sector firms, but an urge to contribute to her community led her to accept the challenge of pioneering a new role in city government as Seattle's CTO.

Jacobs' most pressing priorities are to continue the city's move to Y2K compliancy and to centralize IS services so that departments use expertise and manpower more efficiently. If Jacobs can extend Seattle's IS capabilities by sharing specialized skills among all departments rather than having each acquire its own, as is now the case, she believes she'll improve overall service while holding down costs. Achieving that will require some organizational change, and Jacobs realistically expects that some people within the IS ranks will be disgruntled. "I suspect that this will be a fairly painful change," Jacobs says. Only an IS chief who has organizationwide authority can drive this type of transformation, and that's why the CIO post is gaining prominence in government.

Jacobs also sees the opportunity to directly improve citizens' lives. For instance, the city is partnering with the local school district on a plan to give (or sell at low cost) older, city-owned computers to schools. She's working with Seattle's other public facilities and nonprofit organizations to extend technology access to needy citizens. She'd also like to expand Seattle's job training initiative to include free or low-cost computer training. Such programs can touch the lives of citizens in vital ways. Despite the lower pay—the Seattle CTO's $130,000 salary isn't chump change, but there are no stock options or profit sharing plans in government—being able to make a positive difference in society drives IS executives like Jacobs into the public sector.

–P. Fabris

PHOTO BY DAVIS FREEMAN

Marvin Langston, *deputy CIO of the Department of Defense, sees a world of opportunity in the Y2K challenge.*

A vast arsenal of legacy systems made the millennium bug challenge particularly daunting.

bug challenge particularly daunting. Nearly all CIOs are under heavy pressure to ready their organizations for the year 2000, but those in the Pentagon may have the most difficult task of all. The Defense Department faces intense scrutiny from the White House, Capitol Hill and the public. It has fallen behind schedule, and its IS executives are in the hot seat. The department received a grade of D from Rep. Stephen Horn of California, chairman of the House Subcommittee on Government Management, Information and Technology, for its Y2K efforts as of mid-August 1998. "The Department of Defense simply is not on track to complete Y2K compliance efforts before Jan. 1, 2000," Horn said in a Sept. 9, 1998, press release in which he awarded the entire federal government a D on Y2K compliance efforts.

Just as in the private sector, Langston's job performance and that of other government CIOs will certainly be judged according to their organizations' Y2K readiness. However, perhaps unlike the private sector, where studies show that non-IS executives can underestimate the severity of the millennium bug, other non-CIO federal executives are beginning to share some responsibility for the problem. Secretary of Defense William Cohen, for instance, ordered Defense offices and agencies to report Y2K progress directly to him this fall. In an August 1998 memo, Cohen said that if the Defense Department continues to lag in remediation, he will halt software projects not related to Y2K compliance after Jan. 1, 1999. "This isn't seen as just a techie problem," Langston says. "It is a CEO and COO problem." Congress seems to agree. "We are encouraged by the strong leadership demonstrated recently by Defense Secretary Cohen and Deputy Secretary [John] Hamre. The importance of this kind of leadership cannot be overstated," Horn said in his Sept. 9 statement.

Langston sees more opportunity than peril for government CIOs in the Y2K challenge. If agencies weather the millennium bug successfully despite much publicized failure predictions, the stature of the CIO post will rise, he says. If operations are severely disrupted after the date change, the strategic value of the position will increase in the minds of non-IS government executives, who will fully realize how important IS leadership is to their organizations, Langston reasons.

That may be an overly optimistic assessment, as public sector CIOs can expect their share of criticism if serious disruptions of services occur. However, the public is more likely to hold elected officials most accountable. After all, the president and Congress are the ones who face the ultimate public scrutiny at the ballot box.

Beyond 2000 there will be many benchmarks with which to gauge the success of Defense CIOs. Langston's main mission is to create a network infrastructure that enables all military agencies to communicate data seamlessly. As Desert Storm proved, modern warfare requires instantaneous communication, fast decision making and coordinated logistics and battle plans among military units. Langston is the driving force behind the Defense Department's Joint Technical Architecture (for details, visit *www.jta.itsi.disa.mil*), a document that defines the IT framework for the future. The JTA outlines standards and guidelines for acquiring all systems that produce, use or exchange information: hardware, operating systems, networking protocols, weapons systems and even jet cockpit technology. This far-reaching document lays the foundation for future generations of military technology.

The Online State

Although Wendy Rayner's background is in management, she directed numerous technology-driven process improvement projects while serving as chief operating officer of the New Jersey Department of Environmental Protection (DEP). The centerpiece of those efforts is the first online environmental data management system by a U.S. state. The system allows corporations to file air emission reporting

PHOTO BY KATHERINE LAMBERT

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forms and submit emission statements over the Internet after they have searched a CD-ROM sent by the state department that includes scads of emissions standards and other data. The process makes filling out permit forms a relative snap, speeding the permit process for companies by as much as four months. Next year the department will offer a similar capability for its water, solid waste and hazardous waste programs through a single, integrated database.

Like many public sector entities, New Jersey's state government is Balkanized.

Rayner's success with DEP Internet-based systems provides tangible proof of the value of electronic government services and is a beacon for other state agencies. And if Rayner and New Jersey Gov. Christine Todd Whitman have their way, the Garden State may soon be known as the Online State. New Jersey's push to improve government services using the Internet is part of a national trend that has energized many public officials. (See "And Just IS for All," *CIO* Section 1, April 1, 1998.) Whitman is among them, and Rayner's online success at the DEP led the governor to appoint her as New Jersey's first CIO in February 1998. Rayner has much to do, including reforming IS procurement, devising a single statewide network infrastructure and hiring and retaining staff amid an IS worker shortage. But the vision of an online future is at the forefront of everything. "Our goal is to deliver all our services online," Rayner says. "I think the next generation expects and will demand that."

New Jersey's first CIO, **Wendy Rayner**, *works to make electronic government a reality.*

PHOTO BY ANDRE SOUROUJON

Making the goal of electronic government a reality will require managerial improvements as well as technical ones. Like many public sector entities, New Jersey's state government is Balkanized, with minimal interagency cooperation; by and large, each agency has its own IS staff and IT infrastructure. That environment needs to change, Rayner says, if New Jersey is to become the Online State. The state needs much more cross-agency strategy development, IS resource sharing and, especially, echoing Langston's challenge, a single network infrastructure.

Rayner is concentrating on revamping IS management structures and philosophies to foster interagency systems development and has created interagency teams to tackle network consolidation and other technical issues. A project to be implemented early next year by the state's Health and Human Services and Labor departments illustrates how Rayner wants agency executives and IS personnel to operate in the future. The project's initial goal is to enable state social workers to determine on the Web whether their clients are eligible for assistance services including unemployment benefits, welfare and job training. It makes sense for all that information to be located at one Web site, but that requires that the two agencies adopt the previously unusual tactic of joint project development.

Given the extremely competitive IS staffing environment, Rayner believes interagency collaboration can also improve overall IS efficiency and performance as agencies share IS expertise. Such a strategy can mitigate the staffing shortage. For instance, a small group of experts in a hot skill housed in one agency could offer their services to another agency that lacked that skill. "Cross-agency development can save money and you can do things faster," she says. Those goals are shared by all CIOs, and if public sector IS chiefs can accomplish them, that would be an unambiguous indication of success.

Senior Writer Peter Fabris can be reached at pfabris@cio.com.

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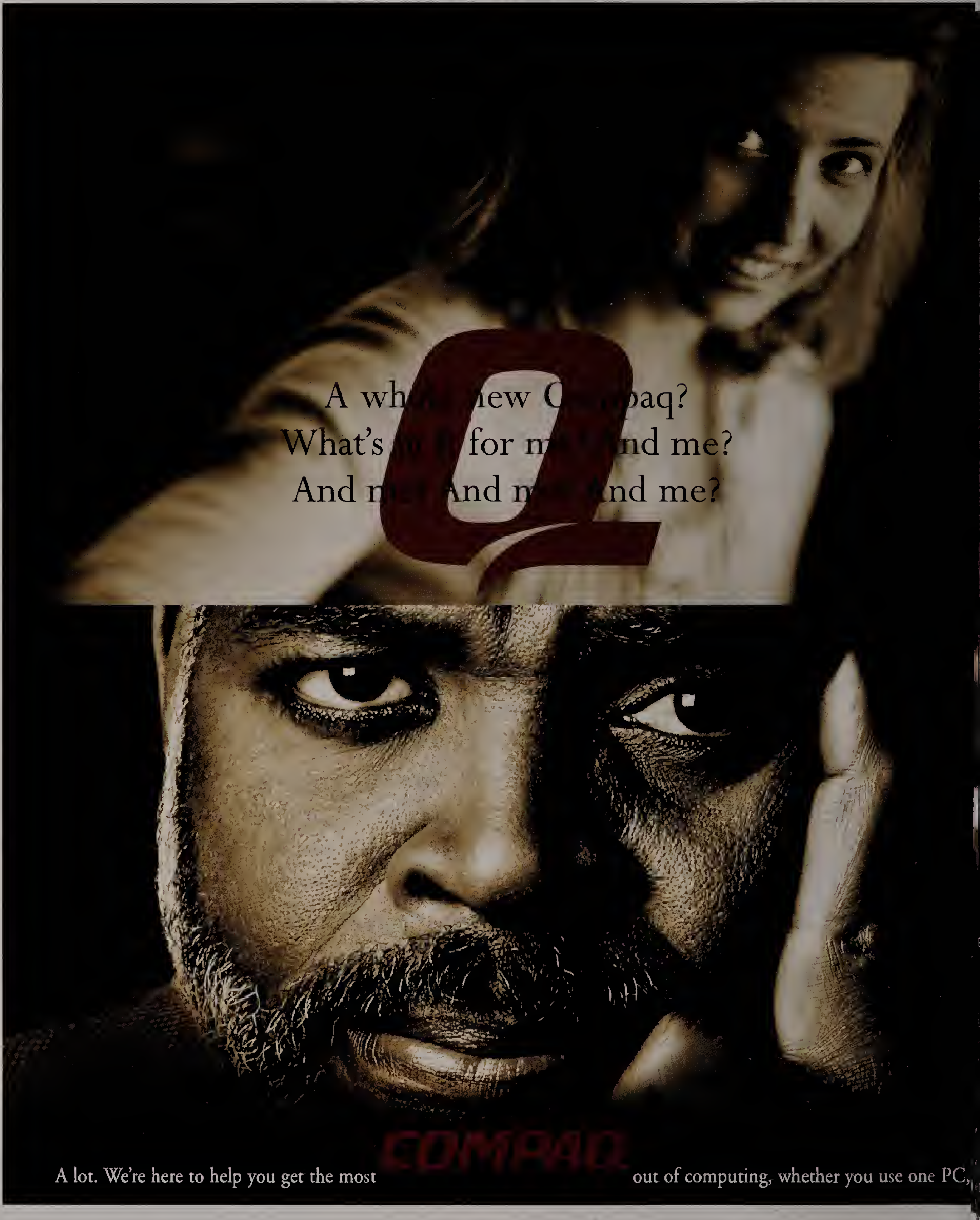
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Put IT in Writing

Today's service level agreements are distinguished by clear, simple language and a tight focus on the business. For IS groups that use them, the benefits can be substantial.

BY CHRISTOPHER KOCH

Ronald Lynn suffers the classic irony of the shoemaker whose children go without shoes. His IT group at Inspire Insurance Solutions Inc., an insurance and technology outsourcing company based in Fort Worth, Texas, serves both external outsourcing clients as well as internal Inspire business units. Money talks when prioritizing service calls, admits Lynn, who is executive vice president and CIO at Inspire. "What do you do when your internal people are screaming for help because you're serving the paying customer instead of them?" he asks.

Reader ROI

IN THIS STORY, YOU'LL LEARN

- How SLAs can help IS break out of "service bureau hell"
- Why today's SLAs succeed where others have failed
- How to create, implement and maintain a successful SLA program
- How to motivate IS staff to make SLAs work

Lynn and his staff must live by two completely different sets of rules. When his paying customers want more service, they come to the bargaining table. When Inspire customers want more, renegotiating the IT budget is not usually an option. While serving external customers, his staff are revenue generators whose time is money. Internally, they are dedicated "service providers" whose time is undefined—the IT budget clock doesn't have a minute hand or even an hour hand. Performance is harder to measure and harder to control. "With our external clients, we're either above or below the performance level that's set in the contract," Lynn says. "If we've fallen below it there's a penalty, and if we're above it we get a few percent back." He can't apply the same sorts of penalties and rewards internally because most of his internal customers are fighting the same sort of "service bureau" perception and budget constraints that he is. "If I sign a contract with accounting and I don't provide the service they want, they can say, 'Hey, we signed a contract.' And I can say, 'Great, I'll start providing that level of service to you—tomorrow.'"

Bob Quinn, vice president and CIO for computer systems at Sun Microsystems Inc. in Palo Alto, Calif., puts the dilemma even more succinctly: "You can't sue your own IT department."

ILLUSTRATION BY JAMES STEINBERG

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CONTRACT
?

Though CIOs serving internal customers cannot hope to have the same sorts of ironclad contracts that govern outsourcing relationships, the service level agreement, or SLA, is the next best thing. The concept dates back to the '60s, when IT departments used SLAs to measure technical services like data center uptime, for example. But SLAs have evolved to a new level in the last few years, becoming more broad-reaching and bilateral. These new agreements require IT to work with its business customers to define a short-list of services that are most important to keeping the business running, such as guaranteed e-mail delivery time or the availability of important software applications.

> "The business wants to understand what it will pay and what it will get."
>
> –JOACHIM FRANK

"These SLAs focus on the consumables that end users really consume," says Dean Davison, senior research analyst for services and systems management strategies in the Los Angeles offices of Meta Group Inc., a consultancy based in Stamford, Conn. "Your customers could care less about 'router uptime'; they want to know how well the network is performing and whether their people can get their work done." The business driver is simple: "The business wants to understand what it will pay and what it will get," says Joachim Frank, worldwide program manager of IT service management in the Munich, Germany, offices of HP Consulting, a Mountain View, Calif.-based division of Hewlett-Packard Co.

The new SLAs are distinguished by their clear, simple language and their tight focus on the needs and wants of the business (see "This Is Not Your Father's SLA," Page 58). IT groups that have adopted this clarity strategy have seen improved relationships with customers, better leverage in budget negotiations and an improved ability to compete with outsourcing vendors. Yet despite these successes, only 20 percent to 25 percent of Meta's IT research clients actively use them, says Davison. The usual excuses of time and money apply. Few IT departments have a clear sense of their own performance levels, so there's usually much work to be done before real negotiations can begin with the business. Testing or benchmarking IT services costs around $100,000 for each major technology "slice," such as the data center, desktop services or networking, according to Davison.

SLAs also usually require outside help. Both IT and the business will want an objective outsider to help develop the agreements; that consulting can add another $50,000 per technology slice. Finally, there is the old "simple is hard" conundrum. Boiling down the long list of IT services into a clear, simple short-list takes time and energy—figure on at least three months to a year, even with consulting help.

The work doesn't stop once all the SLAs are in place, either. The agreements require constant discussion and renegotiation

Keeping It Simple

'Divide and conquer' may be the key to SLA success

SERVICE LEVEL AGREEMENTS thrive on simplicity. IT groups that pare down services into the clearest, fewest number have the best shot at successfully launching and maintaining an SLA program. Offering choices within SLAs is also important so that the business can "buy" only what it needs and so that IT can apply the appropriate level of resources to those choices. That means packaging products and services into good, better and best categories, for example.

Stamford, Conn.-based consultancy Meta Group Inc. divides IT services into the following four major segments, each of which can serve as the foundation for an SLA.

DESKTOP SERVICES Not just the PCs on users' desks, this service includes all the components necessary to serve a typical PC user, such as LAN access, e-mail administration and service and support.

APPLICATION SUBSCRIPTIONS Create a short-list of applications that support the company's most important business processes and charge for them. The price should include perceived value, the cost of providing access to the applications, and the original purchase and installation costs of the application (spread out over the estimated useful life of the application, of course).

PROJECT SERVICES When project teams are formed to install new applications, services or infrastructure upgrades, team members' time should be priced on a time-and-materials basis and charged back to the business through an SLA agreement.

CORPORATE INVESTMENTS Some IT tasks do not fit into SLA product or service categories. Roughly 20 percent to 30 percent of the IT budget should be set aside to cover the costs of products or services that serve the general health and well-being of IT, such as strategic planning, security, disaster recovery, accounting, legal and human resources. Money also needs to be set aside for infrastructure upgrades, such as campus network upgrades or IP deployment. ***–C. Koch***

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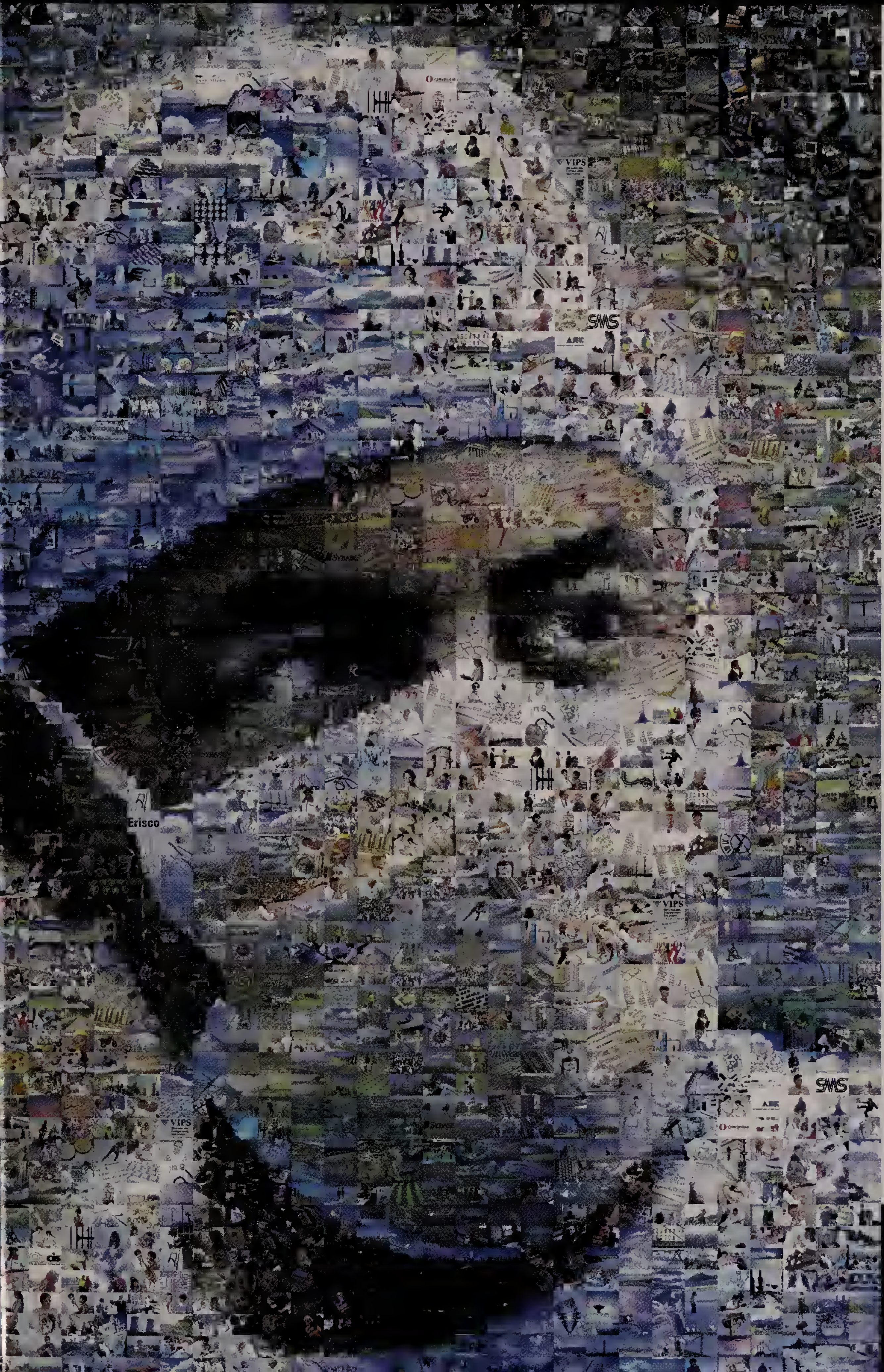

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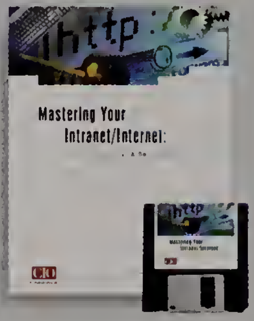

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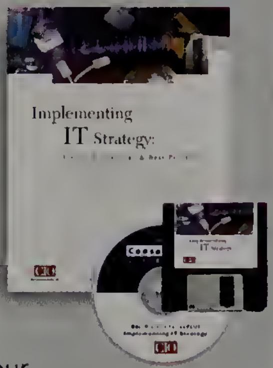

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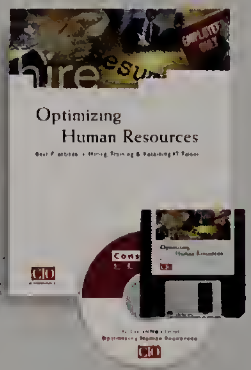

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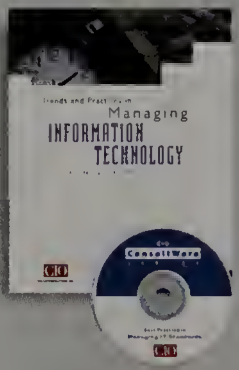

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as the needs of the business change. Untended SLAs can lull IT into a false sense of security about the level of existential happiness among its customers. E-mail response time and network availability statistics may look great to IT, but the business may actually be seething about a wholly unrelated issue. To be effective, SLAs require more thoroughness and vigilance in measuring customer satisfaction so that dissatisfaction not reflected in the SLA metrics will reach IT before a real crisis hits.

> "It makes the business aware that there's a relationship between support and dollars."
>
> –TIM PARSONS

Yet despite the trouble and expense, SLAs provide invaluable performance metrics to IT and create more informed customers. "The biggest benefit of an SLA in my mind is it makes the business aware that there's a relationship between support and dollars," says Tim Parsons, senior vice president for IT at Interstate/Johnson Lane Inc., a brokerage firm based in Charlotte, N.C., that created an SLA for help desk support. "If they can understand the relationship between cost and the level of support, then they can make a better business decision about what support is required and how much it will cost." Without lining up customer expectations with IT's ability to realistically meet those expectations, IT stands little chance of breaking out of the first circle of "service bureau hell": unrealistic expectations matched to limited resources.

What follows are tips and advice, culled from the experiences of committed SLA users, to help clarify the process of defining, implementing and maintaining these new contracts with the business.

Don't try to implement SLAs across the board.

"Start the SLA process by saying, 'Where do I need SLAs the most?' because doing it across the board sounds like a mandate," cautions Sun's Quinn. Quinn uses the Rambo approach, testing SLAs among the SLA skeptics, like engineering. "They know it all, they tend to have the technology background to say, 'I know you can do what I want,' but they aren't living in the practical world in terms of resource management," he says. These demanding people force Quinn to write bulletproof SLAs.

Meanwhile, George Mellor, vice president of support services for BISYS Networking Services in West Newton, Mass., takes a FOIT, or friend of IT, approach, testing SLAs among people most likely to give IT a break. "We needed a group

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that would allow us to make some mistakes," says Mellor. "We picked an IT-friendly and technologically savvy group to work with so we could refine the performance reports and get them into language the users were comfortable with."

Expectations can—and will—be outrageous.

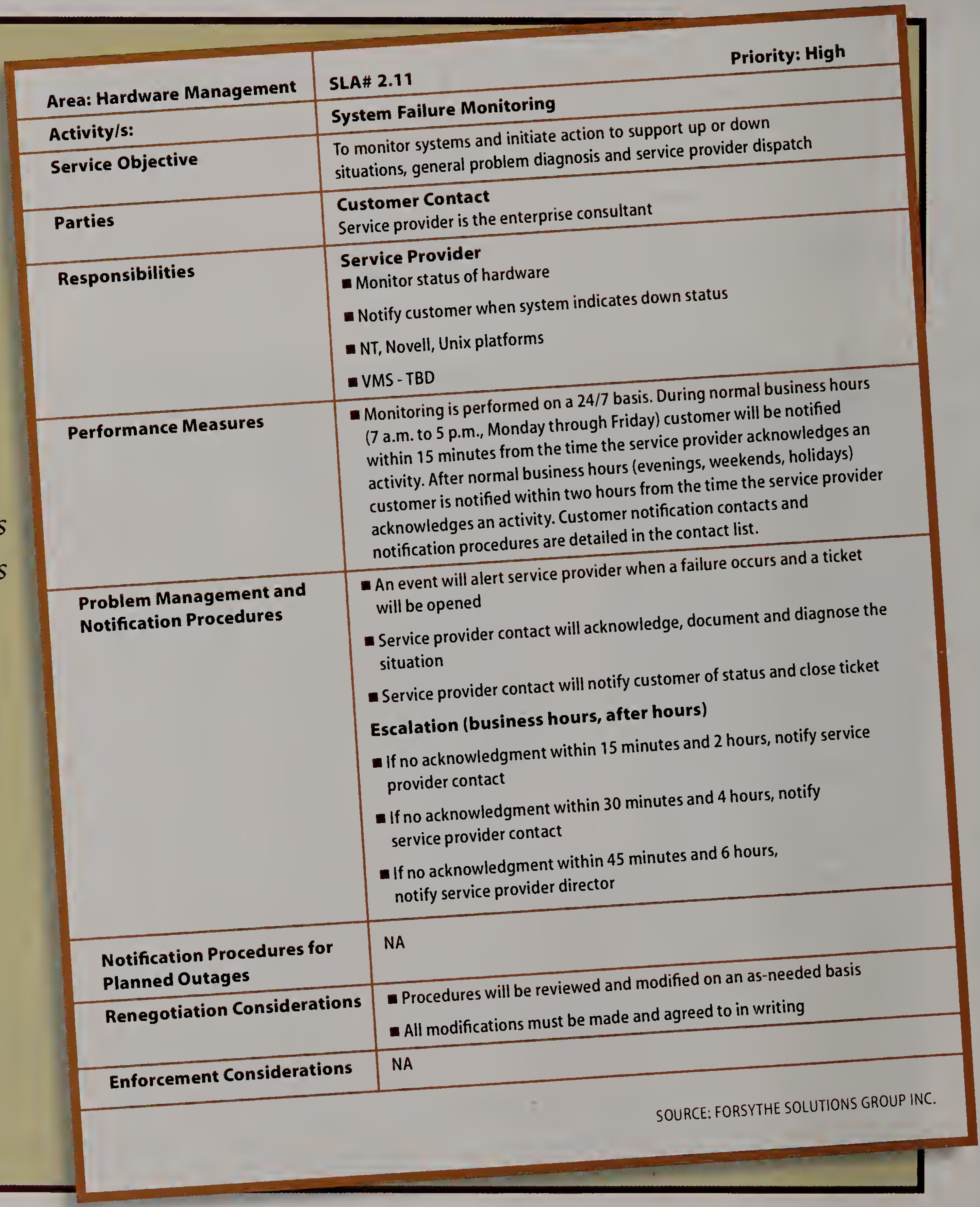
Sun's wandering workaholics often spend 12-hour days slaving away at home or on the road, and they expect IT to fix their broken computers wherever they are. Quinn says talking out these expectations and the resource commitments necessary to meet them is the only way to create SLAs that everyone can live by. "Don't start with what you in IT think people's expectations are or should be; start by asking people what are their expectations," says Quinn. "Because often the expectations are higher than what's reasonable. People need to understand that pushing IT to service these unrealistic expectations will only drive IT off course."

To achieve consistency across the company, train people to develop SLAs.

In half-day to one-day internal courses, Sun trains its IT staff to draft and manage SLAs, according to Quinn. Business people receive a less technically oriented two-hour training class. IT engages the business in a process that includes reviewing the current services, getting feedback from users on the services, getting buy-in that they want an agreement, drafting the new SLA, reviewing it, getting feedback and then finalizing it. There is a standard set of SLA documents that each group

This Is Not Your Father's SLA

Clear wording and a strong business focus are key features of today's SLAs



Area: Hardware Management	**SLA# 2.11** **Priority: High**
Activity/s:	**System Failure Monitoring**
Service Objective	To monitor systems and initiate action to support up or down situations, general problem diagnosis and service provider dispatch
Parties	**Customer Contact** Service provider is the enterprise consultant
Responsibilities	**Service Provider** ■ Monitor status of hardware ■ Notify customer when system indicates down status ■ NT, Novell, Unix platforms ■ VMS - TBD
Performance Measures	■ Monitoring is performed on a 24/7 basis. During normal business hours (7 a.m. to 5 p.m., Monday through Friday) customer will be notified within 15 minutes from the time the service provider acknowledges an activity. After normal business hours (evenings, weekends, holidays) customer is notified within two hours from the time the service provider acknowledges an activity. Customer notification contacts and notification procedures are detailed in the contact list.
Problem Management and Notification Procedures	■ An event will alert service provider when a failure occurs and a ticket will be opened ■ Service provider contact will acknowledge, document and diagnose the situation ■ Service provider contact will notify customer of status and close ticket **Escalation (business hours, after hours)** ■ If no acknowledgment within 15 minutes and 2 hours, notify service provider contact ■ If no acknowledgment within 30 minutes and 4 hours, notify service provider contact ■ If no acknowledgment within 45 minutes and 6 hours, notify service provider director
Notification Procedures for Planned Outages	NA
Renegotiation Considerations	■ Procedures will be reviewed and modified on an as-needed basis ■ All modifications must be made and agreed to in writing
Enforcement Considerations	NA

SOURCE: FORSYTHE SOLUTIONS GROUP INC.

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uses to form the base SLA so that when new SLAs are added, there will be some consistency among the different documents, says Quinn.

SLAs cannot exist in a vacuum; there must be a forum for discussion and negotiation.

"We have company IT steering committees at the executive level, the functional or geographic level and the project level," says Quinn. "The IT executive steering committee oversees the entire company. At that level we'll come in with a metrics score card that identifies the key aspects of service levels that [the executive] group needs to monitor. We meet with [that group] monthly and review the SLAs each quarter. The functional or geographic steering committees review an SLA score card relevant to infrastructure and their applications at a more granular level than the corporate steering committee. The project steering committees focus on the specific needs of the project. For example, right now we have a big initiative around a flexible sales force and we have specific SLAs on services we provide to that project," he says.

On the Agenda

A look at what happens at a typical SLA meeting

REGULARLY SCHEDULED MEETINGS between IT and the business to discuss the status of SLAs are crucial. Keep the meetings to less than an hour and stay focused on SLA issues, recommends Wayne Bock, vice president of solutions for Alternative Resources Corp., a Lincolnshire, Ill.-based outsourcing company. Bock offers a sample SLA meeting agenda:

- **Review the criteria for the SLA and target performance**
- **Distribute reports on measured performance for the current period**
- **Discuss outstanding items and progress on actions since the previous meeting on these criteria**
- **Analyze problems and the impact on the user**
- **Negotiate corrective action plans for the new or ongoing problems**
- **Assign necessary resources**
- **Summarize results from the meeting and distribute them to the appropriate user and IT representatives regardless of their attendance**

–C. Koch

Be prepared to skip some areas of the business altogether.

"There are certain areas and functions within Sun where we say, 'We're just not ready for it here; the relationship isn't there, the customer satisfaction isn't there,'" says Quinn. "Some of the engineering areas like lab support are difficult. The engineers' needs are so variable that we say, 'We're going to provide you with a resource pool, and if we get to a point where your service needs are steady, then we will start talking about having SLAs.'"

> Having too many SLAs makes tracking and discussing performance more difficult and tedious.

Good SLAs are simple and few.

Having too many SLAs makes tracking and discussing performance more difficult and tedious. Those all-important meetings with the business to discuss SLAs become long, boring, complex reporting sessions, with less time devoted to more important issues like needs and satisfaction. "I try to keep the list of SLAs with any one group down to less than one page," says Quinn.

Motivate IT staff to live up to the agreements through variable pay plans.

At Brooklyn, N.Y.-based utility KeySpan Energy Corp., SLAs are tied to the variable component of IT staff salaries. "Once everyone understood this was not another fad and that we were going to tie these SLAs to our own compensation, it became like selling ice cream in the summer," says Bill Haigney, IT planning consultant for KeySpan. "As for selling it to our own IT staff, once we mapped it directly to the variable bonus program, it got their attention and they were supportive." The SLA program at the new utility (formed through a recent merger) is still in its formative stages, but there's no question that it *will* succeed—the New York State Public Service Commission has mandated that the new utility must identify and quantify the costs of IT services so that customers of the regulated portions of the utility are not paying for services to the unregulated units.

Connect SLAs to customer satisfaction.

At Sun, IT surveys its customers randomly so that at least 40 percent respond over the course of a year, says Quinn. To

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- staffing, training and career paths
- distributed publishing approaches
- knowledge management
- designing for online business
- effective interface design
- measuring effectiveness
- community development
- creating maintainable, extensive electronic commerce solutions
- electronic commerce strategies
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- web to legacy systems
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root out unreliable responses, the survey asks respondents to state their understanding of SLAs before they say whether they like them. "We gauge how much they understand the service and then normalize their responses based on their level of knowledge," he says. "It's better than generic surveys because [the latter] tend only to get responses from people who are happy or upset and no one else."

Offer different levels of products and services for different prices.

By dividing an SLA into different performance levels, such as basic, enhanced or premium, for example, CIOs can easily show customers the resource and cost trade-offs required to achieve different levels of support, says Alexandra Whitehead, vice president of the Service Lines Group for Mountain View, Calif.-based research firm G2R Inc. Outsourcing companies are currently using such formulas to reduce the adversarial atmosphere of contract negotiations, she adds. "It makes the CIO prioritize and it makes the vendor explain why it costs more to provide higher levels of service."

Measuring SLA performance must be easy and automated.

Manually tracking SLA performance metrics such as network availability is tedious and prone to error. Also, if someone outside IT—in finance, for example—is calculating the same SLA metrics, the two groups may not agree. Using software tools to automate the measuring process saves time and reduces error and conflict. "If you don't have the cold, hard facts, the meetings where you talk about performance with the business won't go well," says Parsons. "You can't go in there and say, 'I think we are meeting the SLA requirements,' and have someone on the business side say, 'No, you're not.'"

All bets are off if the business really wants or needs something.

Internal IT groups do not have a true arm's-length relationship with the business like an outsourcer does, says Scott Maddern, vice president of sales and marketing for Integris, a Billerica, Mass.-based outsourcing company. IT will still have to send someone to the CEO's office at a moment's notice to do whatever is necessary to get the computer working again. "The reality is that the SLAs get thrown out the window in these kinds of situations," says Maddern.

The only viable defense against unreasonable demands on IT's time is to monitor the use of resources as closely as you do the SLAs.

Resources such as staff time are an important part of SLA negotiations and the performance measurement process, says Maddern. By setting resource allocations for each SLA—1,000 person hours per month for desktop PC support, for example—IT can monitor the amount of resources applied to the particular SLA and a particular department. The goal is not to limit resource commitments but simply to make it clear who is gobbling up resources, he says. "The CIO is usually forced to spend the extra money to serve the needs of X business unit [no matter what the SLA says]. But then when you go back and discuss costs and services with the business, there's a tighter correlation between the two."

SLAs require constant vigilance and maintenance.

At a big company like Sun, the power and relevance of SLAs ebb and flow with the level of focus that business and IT management devote to them. Over the last two to three years, for example, management's focus has moved to other things, and the SLA effort has fallen off commensurately. Quinn says that as CIO he has to force SLAs onto the agendas of top business executives at Sun to bring their attention and support back to SLAs and avoid the perception that Sun is "done" with SLAs now that they have been implemented. "We're at a stage where SLAs are accepted and understood," says Quinn. "But they don't maintain themselves. It's something you have to continually reinforce and maintain." CIO

Senior Editor Christopher Koch can be reached via e-mail at ckoch@cio.com.

Making It Happen

Key steps in the SLA development process

CONSTRUCTING A SERVICE LEVEL AGREEMENT requires planning and care. While the process can vary among companies, there are often basic elements in common. Bob Quinn, vice president and CIO for computer systems at Sun Microsystems Inc. in Palo Alto, Calif., and Naomi Karten, president of Randolph, Mass.-based management consultancy Karten Associates, who serves as Sun's SLA consultant, recommend the following 10 steps as a guide:

1. **Assess whether an SLA is appropriate.**
2. **Get management commitment.**
3. **Designate SLA managers.**
4. **Educate the parties involved about SLAs.**
5. **Assess current services.**
6. **Gather customer feedback.**
7. **Ensure agreement about the agreement; create a draft.**
8. **Solicit feedback.**
9. **Complete pre-implementation activities, such as establishing tracking mechanisms and conducting pilots.**
10. **Implement and manage the agreement.**

–C. Koch

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Giga View *Edited by Perry Glasser*

INDUSTRY ANALYSIS FROM THE RESEARCH COMMUNITY

KM Meets BP

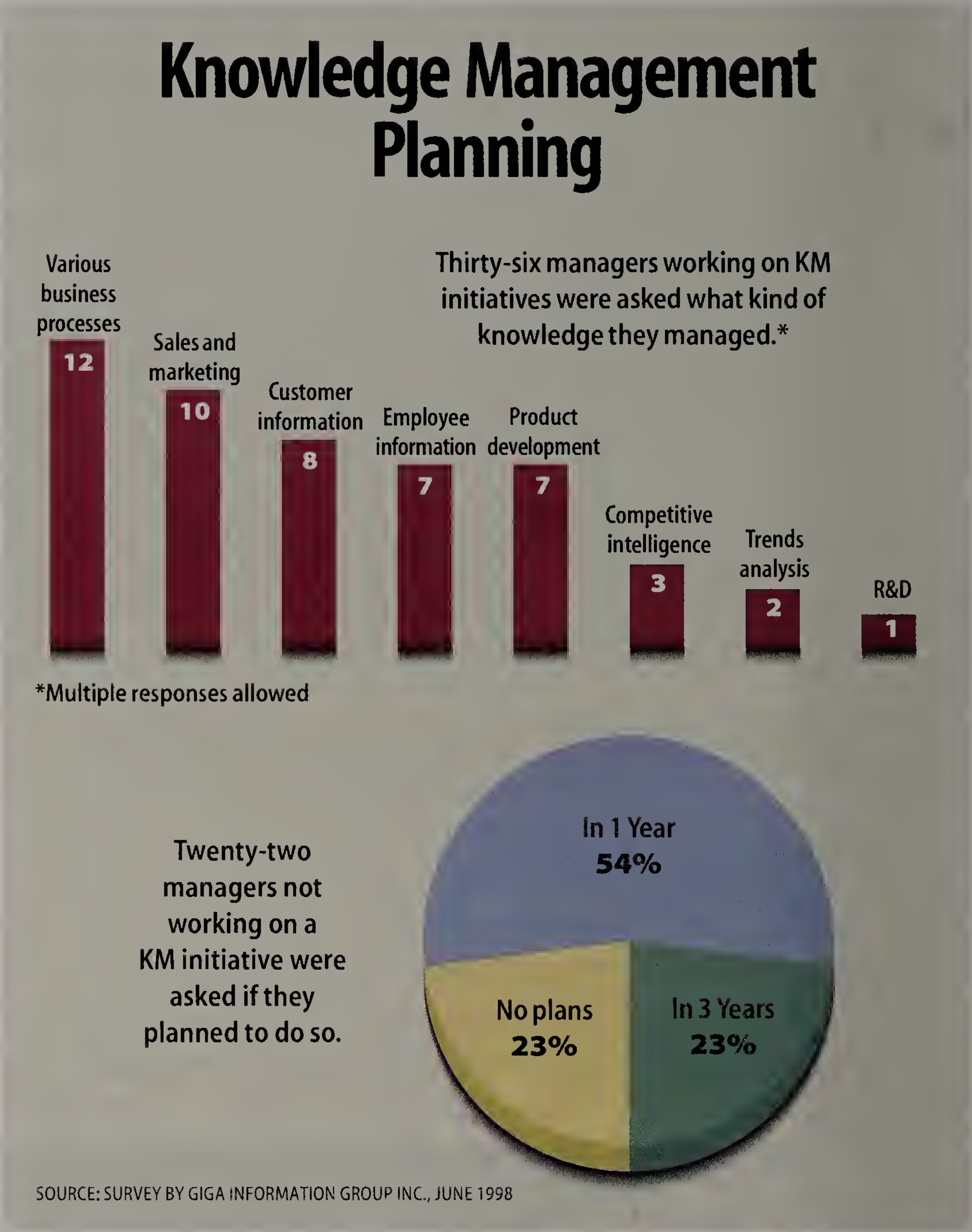
Knowledge management efforts will flop unless they are tied to business processes

BY CONNIE MOORE

JANE SMITH, A WASHINGTON, D.C.-based project manager for International Consulting, is proud of her track record in writing proposals that win large consulting engagements. She and her team often put in long hours on weekends and holidays, staying up late at nights, working under tight deadlines to prepare proposals and presentations they know will knock them dead. The senior partners at IC value her industry, energy and talent, so it's a shame they aren't supporting her at a level equal to her ability. The problem is that when Jane crafts winning proposals, she is re-creating work that already exists in the Paris office.

Too often, Jane's team develops project plans, methodologies, budgets, project descriptions and research materials from scratch without knowing about similar materials prepared for similar projects. Jane's team could channel its tremendous knowledge and creativity into new ideas while using high-quality proposal materials that already exist. Instead, they start every project with a "blank sheet" and work feverishly to make the deadline. Multiply this scenario by the 160 project managers working at IC, and you'll quickly see why the inability to share and reuse knowledge is costing Jane's firm real money.

Many business managers are asking their IS organization to "do something" about knowledge management (KM) because they've heard KM will become the next big competitive differentiator. Too often, however, the typical IT department's first reaction is to evaluate, buy, install or even build KM technologies and then wait for the business to be transformed into a knowledge-based enterprise that capitalizes on its intellectual assets for competitive advantage. Other IS organizations have a slower, more reasoned, methodical approach: attempt to develop a corporatewide knowledge architecture (including available systems, people and procedures) and then, if the project is still alive, undertake an in-depth analysis of KM tools to be used across the organization. Unfortunately, both approaches are blind to two essential considerations for implementing a KM project: the need to change the culture of the organization for KM readiness and the need to integrate knowledge into a business practice.



Knowledge Management Planning

Thirty-six managers working on KM initiatives were asked what kind of knowledge they managed.*

*Multiple responses allowed

Twenty-two managers not working on a KM initiative were asked if they planned to do so.

SOURCE: SURVEY BY GIGA INFORMATION GROUP INC., JUNE 1998

Fostering a knowledge-sharing

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culture is the most important critical success factor for KM projects. In the Ernst & Young Center for Business Innovation's 1997 "Executive Perspectives on Knowledge in the Organization," a survey of executive perceptions and plans for KM, 431 senior IS and business executives in the United States and Europe cite an inappropriate corporate culture as the biggest impediment to knowledge transfer. In fact, in case study presentations by experienced KM practitioners, a culture hospitable to KM repeatedly surfaces as the key make-or-break factor in the successful implementation of a KM program. Though creating such an environment is largely outside IS's scope, no IS organization can remain passive if cultural change is being overlooked. IS must educate the business on the need to develop a climate in which knowledge creation and knowledge sharing will thrive.

A good rule of thumb is that IS project team members should never outnumber the business participants.

Close behind culture in overall importance to any KM project's success is the need to integrate knowledge management techniques into a core competency business process. KM is a new field, so many project managers focus exclusively on the knowledge itself—how to collect, classify, store, find and reuse it. While these are important facets of KM projects, IS must recognize that knowledge creation, sharing and reuse does not happen in a vacuum. To be most effective, the knowledge collected and reused must support a specific business process because without aligning KM projects with business processes, projects risk becoming too technology driven. Such projects have a much higher chance of failure. Just as a major lesson learned from the business process reengineering movement was that cross-functional business processes contribute to an enterprise's competitiveness, an equally important discovery will be that knowl-

Knowledge Management—A Case Study

Tight integration of knowledge creation and dissemination with the customer service business process can create real savings

XEROX CORP.'S AMBITIOUS EUREKA PROJECT IS PART OF A larger initiative that uses case-based reasoning to diagnose and resolve customer calls as quickly as possible, support remote diagnostics and update service documentation. Eureka's purpose is to capture new insights about equipment fixes and new problems encountered on the job at customer sites and share this knowledge among all field-service technicians. Eureka is aligned with the company's strategic efforts to service customers accurately and effectively as close to the initial point of contact as possible.

Before implementation, there was a difference between the knowledge applied in the field by service technicians and the static information found in service manuals. Eureka addresses this knowledge gap by allowing field technicians to write tips that describe their on-the-job experiences. When a technician creates a tip, it is first validated by a peer review panel and, once validated, is stored in a knowledge base, attached to the appropriate documentation on the Web server and used to update manuals quickly. These validated tips are available for reuse by service technicians, who can access them online. Technologies utilized include laptops, CD-ROMs and an electronic bulletin board with a knowledge repository and mechanisms for updating it. These tools allow service technicians to access the electronic bulletin board from the field and seamlessly search for field know-how in the knowledge base, other technical information on the Web server and content on the laptop CD-ROMs.

The project team recognized quite early that cultural issues would be more crucial to the project's success than IT, so it called upon internal industrial psychologists to examine work practices and incentives for sharing. Initially, they assumed financial incentives would be the most effective way to encourage technicians to share knowledge. Practical experience proved otherwise; the best incentive was instead giving name recognition to the technicians who entered validated tips. Within the knowledge base, the names of the contributor and review panelists appear with the knowledge itself.

Xerox introduced Eureka in France in 1996, expanded it to Canada and the United States in 1997 and is now rolling it out worldwide. Metrics gathered from the French implementation include

- **Approximately 1 tip per 1,000 service calls is entered into the system each month**
- **Thirty percent of the service representatives generate validated tips**
- **Eighty-five percent of the technicians access tips**
- **There are 5,000 accesses per month to the database**

The project has generated a 5 percent cost savings in parts and labor in France. Other countries are experiencing similar results.

–C. Moore

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edge must be integrated into all strategic business processes to ensure senior management buy-in.

The IS Role

IS can also play an important role in each of the four phases for implementing a KM project.

Phase 1: Develop a KM vision. The best KM plans focus on one or more specific business processes. IS can provide insights into the feasibility and limitations of KM technologies and can offer a systematic approach to developing a knowledge map that identifies groups of people according to their knowledge needs, their sources of knowledge and their preferred mechanisms for obtaining the knowledge.

Phase 2: Identify and develop communities of practice. Foster a community of users that has a natural affinity for sharing knowledge. Typically, communities of practice share goals, tasks and functional roles, such as a marketing department or a research group. Though Phase 2 should be driven largely by users, IS should closely monitor the project's status. Because few organizations have experience in this area, the project team should consider involving external experts such as industrial psychologists, sociologists or ethnographers.

Phase 3: Analyze business processes. Find opportunities for knowledge to support business processes such as customer acquisition, customer fulfillment and new product development. The knowledge project team should begin to develop best practices for how people will use the new knowledge system. In addition to technical training, users need guidelines on how to integrate the knowledge system and new tools into their day-to-day work patterns. Because of its expertise in systems analysis, IS should contribute substantially to Phase 3.

Phase 4: Design and build the system. IS is largely responsible for building the new system using standard development methodologies. As work progresses, efforts should be made to refine and improve the system, particularly the incentives for the sharing and integration of knowledge in daily work practices.

Musts

Be proactive about KM. Don't wait for the business units to initiate interest. Use advanced technology groups to investigate KM tools and use customer relationship managers to look for opportunities to apply KM to business processes. And always remember that since cultural problems are the most frequent cause of KM project failure, develop and publicize best practices for how KM will be integrated into the work process. Do not force users to figure it out for themselves.

Ask 10 Questions

IS executives must have the answers before embarking on knowledge management (KM) initiatives

1. **Who in the organization is suffering from a "knowledge gap?"**
2. **What do they need to know?**
3. **Why do they need knowledge?**
4. **How is knowledge distributed now?**
5. **Which business processes can be enhanced by shared knowledge?**
6. **How will those business processes use shared knowledge?**
7. **How will shared knowledge affect business process performance?**
8. **How will the change in business process performance be measured?**
9. **What new procedures will be needed to help users adapt to KM?**
10. **How can training and support services help incorporate KM into business processes?**

As with any new concept or discipline, IS can easily encounter danger when moving into KM's uncharted terrain. To avoid problems, integrate KM concepts and technologies into specific business processes rather than treating KM as an enterprisewide IT architecture project or top-down enterprisewide business initiative. Focus pilot efforts on existing communities of practice that converge with strategic business processes. Look for "friendly" pilots with project champions in areas such as scientific research, product development and customer service.

Avoid IS-driven KM projects. Mandate that business users drive the project, particularly in developing communities of practice and analyzing work processes. A good rule of thumb is that IS project team members should never outnumber the business participants. Get involved in the earliest stages of the project to identify feasible KM technologies and the limitations of KM tools and to provide a systematic approach to the project. Staff KM projects with a small number of people with broad experience in IT. Subject matter expertise could include content-based reasoning, data warehousing, document management, e-mail, groupware and intranets.

As overall awareness of knowledge management grows within the business community and becomes recognized as a significant competitive advantage, interest in KM implementations will increase, particularly in customer service, research and product development. Ultimately, KM will become an accepted business practice, much as quality is today. And when this happens, IS must be prepared to infuse knowledge sharing and reuse concepts into all core business processes.

Connie Moore, a vice president and senior analyst at Giga Information Group Inc., can be reached at cmoore@gigaweb.com.

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Edited by Howard Baldwin

Sending Data First-Class

Premium ISPs bypass the masses

BY DAN SWEENEY

BACK IN THE REIGN OF QUEEN VICTORIA, THE English built a pedestrian tunnel under the Thames. An engineering marvel, it was famous throughout the world. Merchants set up shops along the sides of the tunnel and lit the tunnel with gaslights. Then the transients and tramps discovered the place and preyed on passersby. What happened then? The shops disappeared because no one wanted to go down there anymore.

Sound familiar? Today the pipeline that is the Internet faces similar conflicts as merchants and businesspeople attempt to exploit its potential even as modern-day tramps and transients surf porn, broadcast hate mail and occupy precious bandwidth. And as the volume of casual users grows, the plight of the CIO grows more desperate. "There's simply no priority given to commercial traffic over AOL chat sessions," laments Jim Freeze, senior telecom analyst for Forrester Research Inc. in Cambridge, Mass. "That's why businesses are looking to a new type of Internet service provider that can offer priority service."

This new class of ISP, variously termed premium, enterprise-class or even super ISP, scarcely existed a year ago and still accounts for only a tiny fraction of the thousands of ISPs currently operating. But for CIOs increasingly frustrated by Internet congestion and dependent on industrial-strength Internet connections for conducting electronic commerce or for binding together wide area networks, premium ISPs purport to offer the solutions other ISPs can't.

IN THIS SECTION

DATA IN THE SKY
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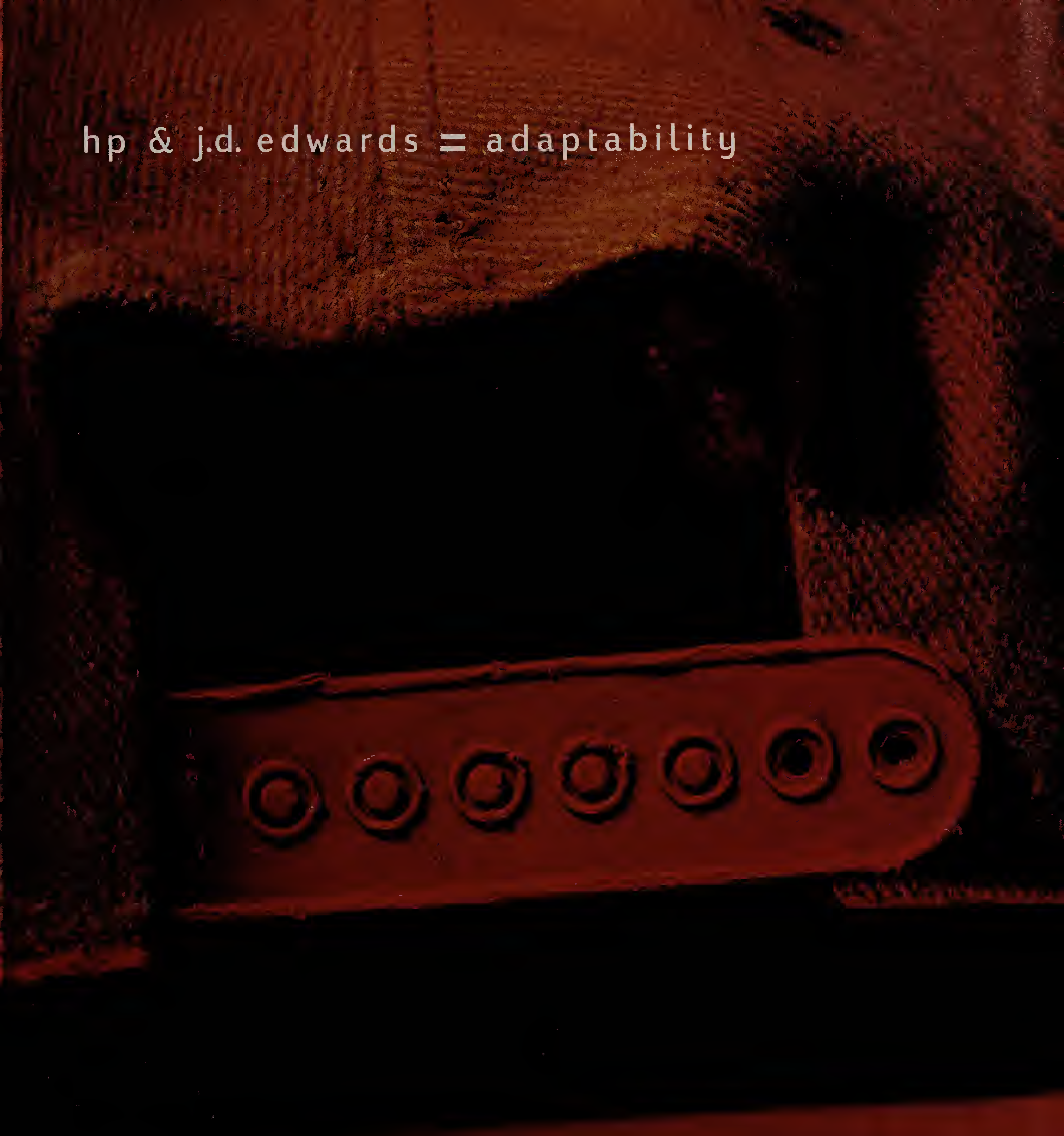
Relieving Congestion and Other Symptoms

What makes a premium ISP premium? First, there's the ability to provide immunity from Internet congestion. Second, there's a varying smorgasbord of special services. But even within each of these areas, there's much differentiation. Avoiding Internet congestion can mean moving data internationally quickly and reliably. Or it can mean facilitating remote access connections to central databases for regional offices or telecommuters. It can even involve simultaneous delivery of large volumes of e-mail. Specialized services may include Web hosting and the maintenance of dedicated data centers for Web servers and sites, provisioning and maintaining intranets, and generally providing an extra degree of security and network reliability not available from simple Internet service providers.

"A big part of our business is the delivery of content such as software patches from our Web sites," says Ken Anderson, vice president of global technical architecture for Novell Inc. in Orem, Utah, which uses Digital Island Inc., a Honolulu-based premium ISP that serves multinational corporations. "Since we serve customers worldwide, we're very concerned about the speed with which those outside the U.S. can access our Web sites. Digital Island gave us a guaranteed level of bandwidth around the globe and largely relieved us of network management responsibilities in regard to our Web sites so we can focus on content," Anderson says.

ILLUSTRATION BY JEFF JACKSON

PlanetAll in Cambridge, Mass., a Web-based contact and calendar service, provides virtual personal organiz-



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ers for its customers. Brian Robertson, its chief technology officer, says, "We send out some 200,000 e-mails every night. We needed speed, we needed load balancing and we needed a secure location to house our Web farm." It chose NaviSite Internet Services, based in Andover, Mass., for its Web hosting facilities and a special service provision called private transit, which enables the firm to restrict transmissions to the highest-speed optical pathways shared by AT&T, GTE, MCI and Sprint and thus avoid the public Internet altogether.

For Robertson, NaviSite provided the right balance of strengths. Private transit provided the bandwidth to ensure that time-sensitive scheduling information would be delivered expeditiously, while the physically secure data sites maintained by NaviSite protect the core of PlanetAll's business, namely its banks of servers with their vast libraries of client information.

Teletrac Inc. of Kansas City, Mo., a wireless data carrier providing fleet management and vehicle tracking services, relies heavily on the remote access provisions of Cupertino, Calif.-based Concentric Network Corp. Sales and other field personnel in the United States constantly dial up central databases in Kansas City over a secure private network, says Craig Johnson, data communications specialist for the company. "Frequently, access time was frustratingly slow, and we were concerned about network security. The data we transmit often consists of highly confidential client information. Since we provide security services to our customers, our own corporate intranet has to be highly secure and, in addition, data must be immediately accessible to enable us to respond to customer emergencies."

Concentric also offers last-mile connections to remote locations via dedicated high-speed T1 circuits or the new, less expensive digital subscriber line (DSL) connections providing T1 speeds (1.5 Mbps) over ordinary phone lines. For remote dial-up connections over conventional phone lines, customers can also request guaranteed consistent transmission speed. These services came in handy for San Jose, Calif.-based On

Using Satellites to Unclog Network Arteries

Remote corporate campuses look to the skies for unlimited bandwidth

DATA IN THE SKY

IS THE BEST WAY TO GET MORE bandwidth simply to get rid of the cable completely? Targeting remote offices where networking costs are hard to justify, satellite companies such as Comsat Corp., GE Americom, Hughes Network Systems Inc. and PanAmSat Corp. have begun to compete with traditional terrestrial networking technologies by delivering frame relay, ATM and ISDN links in outer space. They're also poised to deliver e-mail and Web browsing to locations where currently there might be only local telephone service.

Princeton, N.J.-based GE Americom, for instance, is targeting remote corporate campuses that have only low-speed 56K leased lines and companies whose backbones don't have enough bandwidth to sustain continued multimegabit video and data streaming for hundreds of browser users. Paul Andrews, product manager for the GE Star Satellite System, explains that by using satellites, "users can bypass their terrestrial Internet connection completely."

A typical system consists of a desktop PC and an inexpensive server, each equipped with digital video broadcast (DVB) interface cards. Users access Web sites through their low-speed Internet connection and receive multimegabit data streams back through a dish antenna on the roof. The DVB cards convert incoming RF satellite signals and place them on the TCP/IP stack. "DVB uses IP encapsulation technology to make Internet traffic look like MPEG-2 data," says Andrews. "We're providing service right now to regions of the earth that have no access to cabled Internet." The cards sell for $400 to $600, depending on features, but he expects their price to come down to about $150, the cost of an Ethernet card, within a year.

The next step will be multicasting over satellite, that is, full-motion digital video at 4MB to 6MB, which previously could be achieved only through analog video or large-scale videoconferencing. Full-motion video over a terrestrial Internet connection is almost impossible because of congestion that results when data must pass though a large number of routers.

"We can bring this capability anywhere in the world," says Susan Miller, vice president for advanced applications management in Comsat's Satellite Service division in Bethesda, Md. Like its competitors in the sky, Comsat's Link 1 portfolio also provides a multiservice platform for bandwidth on demand, ATM, frame relay, ISDN and SS7 (public switched telephony), with simultaneous voice, data and video, using PC server interface cards.

Ultimately, satellite connectivity may enable multinational corporations to push more bandwidth to remote locations at costs equal to or lower than terrestrial links. And they won't need to re-engineer their existing communications infrastructure. The sky is no longer the limit.

–Peter Ruber

ILLUSTRATION BY JEFF JACKSON

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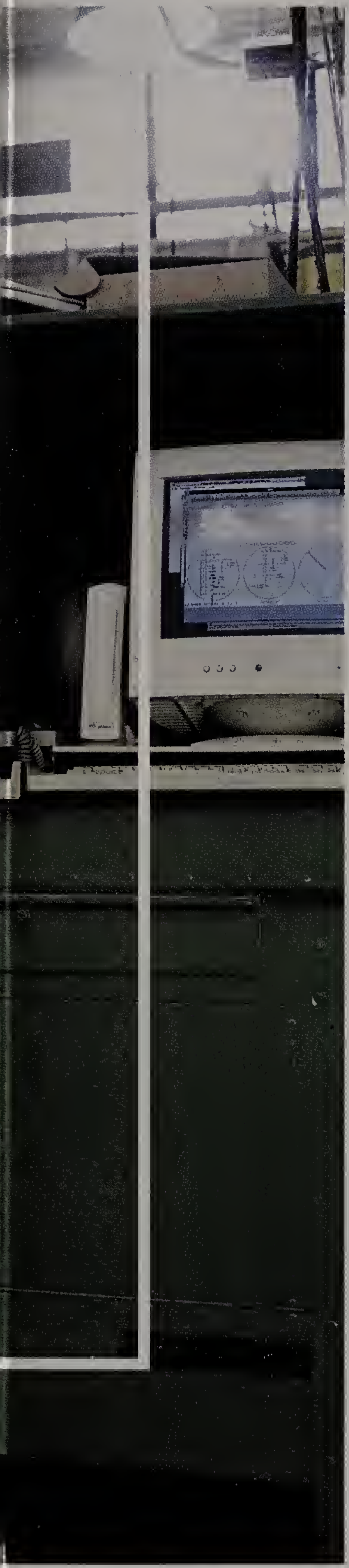

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Command Corp., a provider of in-room video systems for the lodging industry. Jim Garcia, director of information technology, says, "In our business, we're constantly out in the field installing our systems in hotels, so we have to use an intranet to communicate with headquarters. We'd experienced the usual frustrations with low-speed transmissions. Concentric's beefed up infrastructure and speed advantage [gave us] a significantly faster intranet than we had previously."

How do the premium ISPs move data faster than the go-slow majority? The answers aren't immediately obvious because most use the same backbone fiber connections as do other ISPs, that is, the long-distance lines owned by AT&T, GTE, MCI, Sprint and UUNet, the major owners of fiber infrastructures in the United States. However, most of the premium ISPs pay premium rates to the backbone providers in return for special routing arrangements that keep their data on the fastest links—on the expressways and off the surface streets, so to speak. In addition, some employ proprietary networking software to keep traffic moving briskly. For instance, AboveNet Communications Inc., also in San Jose, uses the ASAP diagnostic and routing protocol for detecting and avoiding network snags. But whatever the individual combination of tactics utilized by a premium ISP to goose its data transmissions, all avoid as much as possible the heavily traveled public Internet connections open to any and all Internet service providers.

Beyond Web Hosting

In addition to providing rapid transit for subscriber's data packets, many if not most of the premium ISPs provide Web hosting facilities that go well beyond the mere provision of space on a server. Companies such as Frontier GlobalCenter Inc. in Sunnyvale, Calif., Exodus Communications Inc. in Santa Clara, Calif., Digex Web Site Management in Beltsville, Md., and NaviSite may allocate dedicated servers to that customer or allow him to move his own data servers into an ISP owned-and-operated data center. Digex promotes a concept called co-location, where servers, whether owned or leased by the customer, are placed in a number of different data centers so that corporate Web sites may be accessed quickly regardless of where the caller is situated geographically. NaviSite, incidentally, also provides the added service of expediting delivery of data to outside callers who are not part of a corporate intranet.

"A premium Web site hosting service is very important to our business," remarks Robert Derby, marketing Internet services manager for Casio Inc. in Dover, N.J., who launched a new Web site to

Finally, Dictation the PC Understands

IF YOU STILL HAVE A SECRETARY, congratulations. For the rest of us, transcribing our notes from a dictation device just got a whole lot easier. Admittedly, the Olympus **D1000 Digital Voice Recorder** is not new—it was announced a year ago at Comdex. But now it's really useful, thanks to the addition of a customized version of IBM's ViaVoice speech recognition software. Today executives can dictate anywhere and then convert voice to text by taking the flash-memory card out of the DVR (looks like your typical PCMCIA card) and slipping it into the bundled adapter for laptops (an optional PCMCIA card reader is available for use with desktop computers as well). The ViaVoice text recognition software then listens to the digital recording and translates it into text. The text can then be imported into word-processing documents and edited.

The D1000 comes with software, cables, flash-memory card and adapter card. Price for the DVR is $299, with extra memory cards available for $49 (2MB) or $99 (4MB). The additional card reader for desktop computers costs $270. For more information, call 516 844-5000 or visit *www.olympus.com*.

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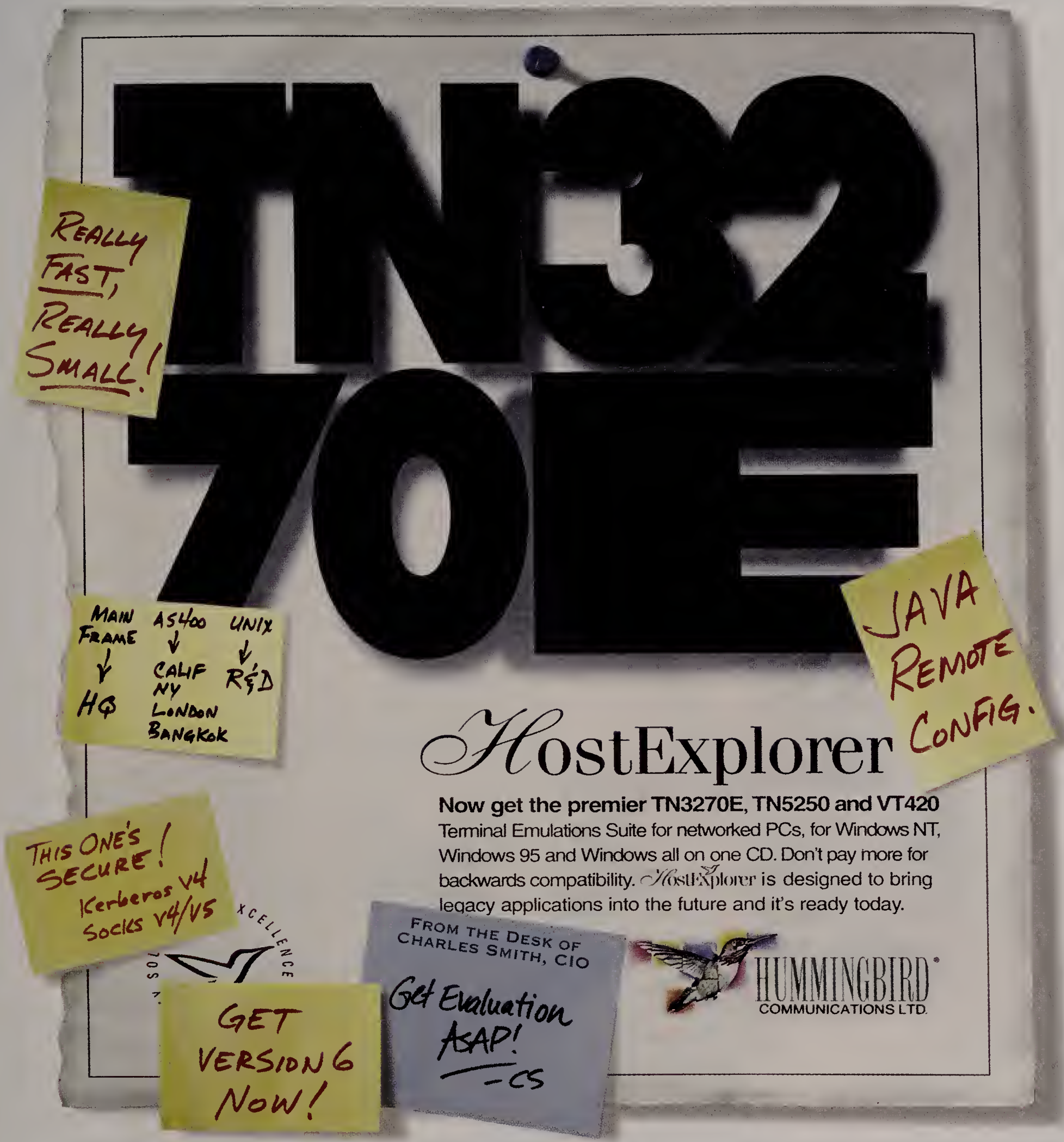
JOHN HANCOCK WROTE HIS SIGNATURE as big as he did on the Declaration of Independence so that King George III could read it without his glasses. If you want your John Hancock to be just as large on your electronic documents, there's a new utility for Microsoft Corp.'s Word 97 from Communication Intelligence Corp. called **Sign-it**. Using a pen-input device, users can insert their signatures into any document.

For security reasons, the software includes an analysis capability that tracks the signature history of the document, including name, time, date and reason for signing. If the contents of the document are altered after a signature has been affixed, the analysis tool erases the signature. CIC anticipates the product will be used for electronic forms and other automated processing applications. Sign-it costs $69 per copy and is available for downloading from the company's Web site. For more information, call 650 802-7888 or visit *www.cic.com*.

To an IT manager, this is a pin-up.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Some premium ISPs offer or support IP telephony (Concentric) and videoconferencing (Digex, Concentric). While such services aren't unique to premium ISPs, the latter, by virtue of the speed of their networks and their ability to prioritize certain types of data, may be able to approximate the performance of a reserved high-speed data circuit from a long-distance carrier at a substantially lower cost.

Of course, high-speed and specialized networking services aren't of much value if the provider can't ensure reliable delivery, and the premium ISPs have taken the lead in offering service level agreements (SLAs). SLAs remain very rare among ISPs in general, and if they exist at all, they usually promise nothing more than best-effort delivery, which scarcely constitutes a service level at all. The premium ISPs tend to be much more specific. Guaranteed maximum latency or delay time through the networks is a common provision among the premium ISPs, with minimum delay times set in milliseconds. Obviously, the lower the better, and for applications like videoconferencing and IP telephony, low latency is crucial.

Do They Have a Future?

For now, the SLA remains one of the premium ISP's strongest assets, but in August, UUNet announced a service level agreement for corporate customers that rivals anything from the premium ISPs, stipulating not only speed and reliability but offering credits in the event of a failure to meet the terms of an agreement. "They really upped the ante for the whole industry," says Forrester's Freeze, "and I expect other big ISPs like Sprint and MCI to not only follow suit but even try to top them."

If Freeze's prediction is valid, the premium ISP might prove a passing phenomenon; after all, the majors own the basic high-speed physical infrastructure to enable premium service and simply sell capacity to the premium ISPs. But Mark Fisher, senior vice president and general manager for Concentric's network services division, argues that more is involved in providing premium service than sheer network capacity. "Ownership of the IP layer of routers, not the physical layer of fiber, is what will determine success in this business. It's how the ISP makes use of the available capacity through sophisticated routing arrangements that really establishes the speed and reliability of the network." CIO

Dan Sweeney is a technology writer based in Burbank, Calif. He can be reached via e-mail at dswee34359@aol.com.

LEADING EDGE

The Virtual Meeting Room

WILL THE WEB MAKE VIDEOCONFERENCING EASIER? Northern Telecom is betting it will with its **Meridian Intranet Meeting Software** (MIMS). One of the drawbacks of videoconferencing is the high data rate you need to send video frames back and forth across the network. MIMS eliminates this facet by using Java-based avatars—digital representations of meeting participants—that appear in a browser window. Because the interface is Java-based, all users have the same version of the software. Participants use the telephone for voice communication, which in turn runs over the intranet using the IP protocol.

Each user has a virtual briefcase in which to carry room identifiers for multiple meeting rooms. Virtual business cards contain all necessary information for contacting other users and identify the URLs of each meeting room. In addition, users can share documents via a collaborative browsing capability; presenters can also control documents on their own. MIMS runs on a Windows NT server and integrates with Nortel Meridian PBX systems; releases in 1999 will integrate with PBXs and audioconferencing solutions from other vendors. Pricing is $100 per user; site licensing is also available. For more information, call 800 466-7835 or visit *www.nortelnetworks.com.*

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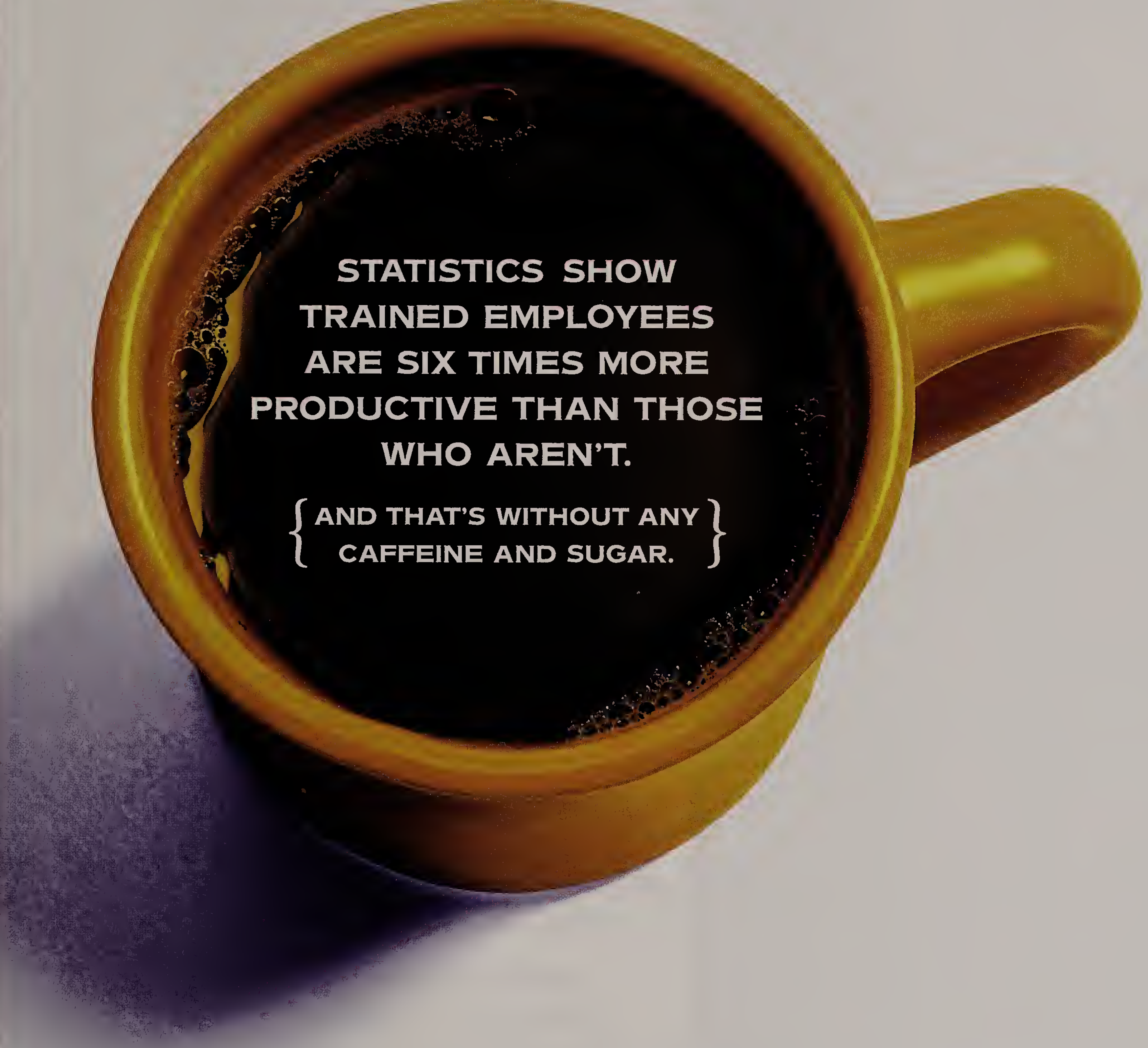

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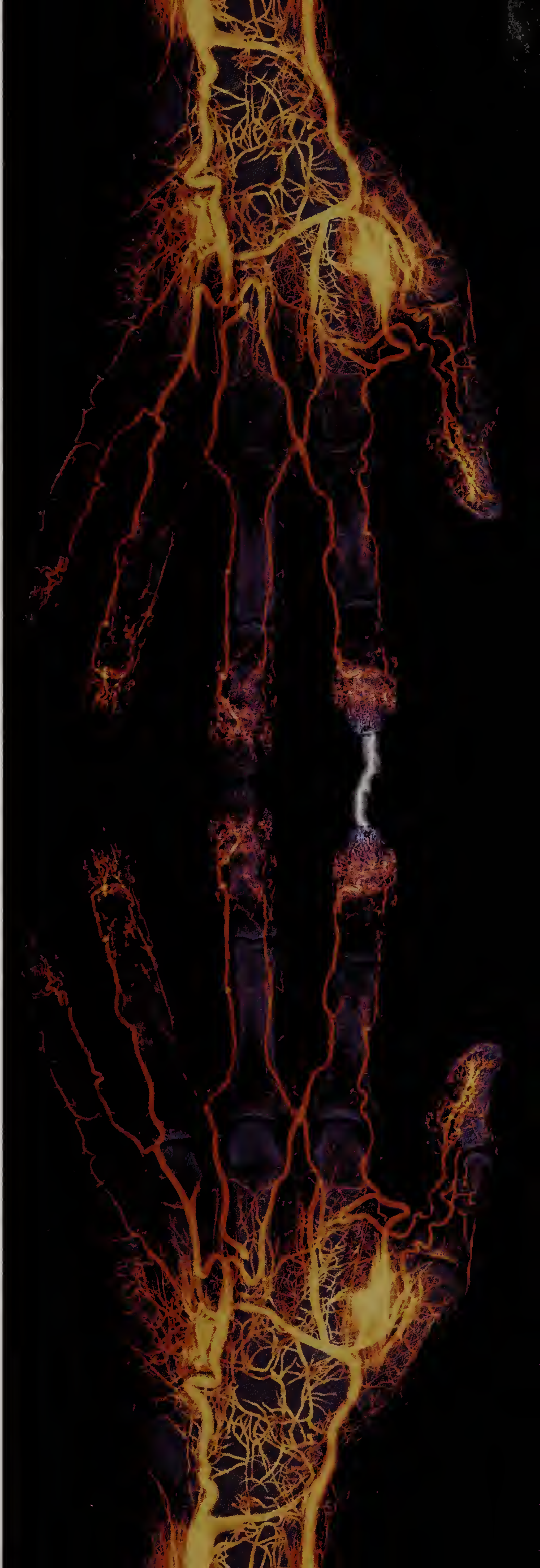

Working Smart

MAXIMIZING THE PAYOFF FROM I.T.

Motorola's Semiconductor Products Sector's EIS

At Motorola Inc.'s Semiconductor Products Sector (SPS), based in Austin, Texas, putting timely information into the hands of managers used to be a problem, given the global scope of the company's operations. Then in 1994 SPS implemented an executive information system (EIS) that let managers in the finance department quickly access data warehouse information from their desktops. Today SPS has moved the system over to an intranet that's available to other executives besides those in finance, and in the process it has reduced headaches involved in implementing and maintaining new applications.

The sector had reams of detailed information stored in data warehouses. But the data wasn't doing anyone at the company much good because end users couldn't easily find what they were looking for. According to Howard Gentry, vice president and director of finance for sector financial analysis, the driving motivation behind the project was to supply users with a "tool resident on the desktop that accounting and finance people could figure out." Gentry says that he didn't want to require managers to know arcane SQL search commands to locate the data they needed. "The initial project four years ago involved getting managers business metrics as well as customer and manufacturing information," adds Mike Bloxam, manager of data warehouse tools and decision support at SPS.

At the time, the Web hadn't really taken off, so SPS opted to implement a client/server-based EIS with online analytical processing software from Gentia Software Inc. of Wakefield, Mass. By the beginning of 1997, 1,000 users from finance, marketing, sales and accounting departments around the world used the Gentia software to access information on their desktop clients from one of three data warehouses.

As with any client/server environment, maintaining the applications on the six or so computing platforms used by SPS employees proved troublesome. And as employees came to rely on existing EIS applications, they wanted new applications. Unfortunately, introducing new applications across the company proved problematic because each new group of users had to be trained and supported.

In April 1997 SPS decided to organize its operations around customers rather than product lines or regions, recalls Bloxam. To support the reorganization, SPS chose to build a global intranet that would allow managers to access the same information as they had with the client/server system. SPS implemented WebSuite, a development environment from Gentia that enabled the company to make its existing EIS applications accessible through standard Netscape Communications Corp. browsers. By July 1997 SPS had its EIS intranet up and running.

Now accessing customer-centric data is as easy as point and click, says Gentry. In about five minutes, users can find out what customers are buying, their order histories and the status of their current orders. Having the information so accessible enables managers to be a lot more proactive when problems arise. "If for some reason a customer doesn't receive a shipment when promised, a manager will know that immediately and can find out why," says Gentry.

About 1,500 employees access information through the intranet. Because applications are accessible through a standard browser, there's no need to train employees when a new feature is rolled out. And rolling out new applications on the intranet takes about half the time it did in the client/server environment, Bloxam says. Today 3 people maintain the applications, compared with the 12 who had to keep things running before.

SPS is even expanding on the anywhere/anytime computing model the Internet supports. About 700 managers equipped with Motorola pagers get the latest intranet-based business information sent to them on the road. "This is a great new capability that came out of the original executive information systems project," Bloxam says.

Vital Statistics:

- **Organization:** Motorola Inc.'s Semiconductor Products Sector, Austin, Texas
- **Application:** An intranet-based executive information system
- **Technologies:** Online analytical processing and data access software, and the WebSuite application development environment from Gentia Software Inc., running on Apple, IBM, Microsoft and Sun platforms
- **Scope:** 1,500 employees worldwide, including senior executives, managers and project analysts
- **Sponsor:** Howard Gentry, vice president and director of finance for sector financial analysis
- **Objective:** To provide end users with quick access to data warehouse information
- **Payoff:** Reduced time to roll out new applications by half; improved system maintenance and response times worldwide

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Send Working Smart ideas to Features Editor Megan Santosus at santosus@cio.com.

ADvisor

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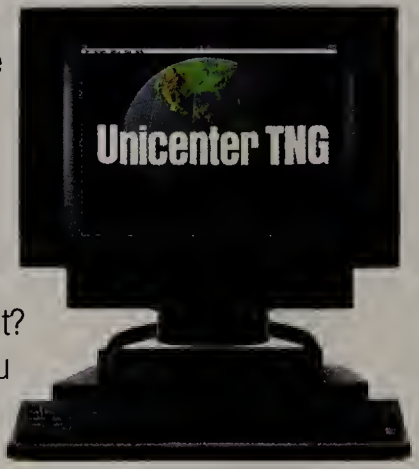
Your Choice.

Features	Unicenter	IBM/Tivoli TME 10
Business Process Views™	✓	
Real World Interface	✓	
Fully Integrated Management Functions	✓	
Fully Integrated Network Management	✓	
Policy-Based Management for All Functions	✓	
Manages Over 30 Platforms	✓	
Also Manages AIX, AS/400, OpenVMS, and MVS	✓	
Open and Interoperable	✓	✓
Published APIs for Over 14 Management Functions	✓	
Object-Oriented Enterprise Management Schema	✓	
Intelligent, Autonomous, and Lightweight Agents	✓	
Built-In Security	✓	
Single Sign-On	✓	
Network Security Including the Internet and Intranets	✓	
Monitoring and Event Management	✓	✓
Support for SNMP and HMMP/HMMS Standards	✓	
Virus Protection	✓	
Desktop-to-Host Storage Management	✓	
Software Delivery	✓	✓
Integrated Service Desk	✓	
Workload Management	✓	
Complete Job Flow Process Visualization	✓	
Extensive Web Server Management	✓	
Output Management	✓	
Resource Accounting	✓	
Integrated Support for MVS Management	✓	
Supports DECnet, TCP/IP, SNA, and, IPX/SPX	✓	
Wizards for Easy Customization	✓	

This simple chart only begins to explain the enormous difference between Unicenter® and IBM/Tivoli TME 10.



What clients want today are complete solutions not just software initiatives like SAA, OfficeVision and SystemView. The questions are, do you want to bet your career on IBM's view of the future? Can you afford to wait? And how can you have confidence in a solution that is so IBM-centric and biased?

Those are just a few reasons why thousands of clients prefer Unicenter. It's the industry standard for network and systems management. Today, more than 93% of the Fortune 500 and thousands of small to medium-size businesses trust CA for enterprise management.

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* * *

CIO in the News

What's NEW @ CIO Communications, Inc.

Gary Beach Testifies Before U.S. Congress

CIO Publisher Gary Beach traveled to Washington, D.C. this past July to testify at the U.S. Senate hearing of the Senate Special Committee on the Year 2000 Technology Problem. The hearing focused primarily on the Year 2000's impact on the telecommunications industry. Gary Beach, the sole representative from the magazine publishing industry, testified about the views of *CIO* readers and customers. A complete copy of the testimony can be found at *www.cio.com/forums/y2k/y2k_beach.html.*

So successful was his first testimony, Beach was invited to testify again in September… this time before the U.S. House of Representatives' Committee on Science and Subcommittee on Technology. This hearing focused primarily on the Year 2000's impact on consumers. Beach shared many of the results from the CIO Y2K Consumer Awareness study, released this past June. Complete results and methodology of the study are available at *www.cio.com/marketing/releases/y2k_awareness.html* and *www.cio.com/marketing/releases/execsumm.html,* respectively.

CIO's Y2K Coverage

The excitement and intrigue of the Year 2000 has captivated the world. However, with less than fourteen months until January 1, 2000 and still many unresolved problems, the so-called millennium bug has evolved into one of the most serious and significant news stories of the day. Journalists continue to turn to *CIO* magazine for research, analysis and commentary on this and other critical topics. Here are just a few of the organizations we've recently provided expertise or background to on the Year 2000 technology problem:

- *NBC/"Today"*
- *Newsweek*
- *CNN/"Worldview"*
- *CNN/"Science and Technology Week"*
- *CNN/"Managing with Jan Hopkins"*
- *ZDTV/"ZDTV News"*
- *The Los Angeles Times*
- *U.S. News & World Report*
- *U.S. Senate*
- *U.S. House of Representatives*

IDG Launches Global Quick Quote for IT Marketers

Global Quick Quote is a fast interactive way for media planners to review their options when they are putting together their media campaigns in any of IDG's 285 publications. This proprietary Web tool is easy to use. Advertisers just specify the target audience, ad type, frequency and geographic region.

Global Quick Quote will use this criteria to develop sample media plans and costs. This free service is available on the IDG website at *www.idg.com/globalquickquote.*

Scholarship Update

Last fall, CIO Communications, President and CEO Joe Levy, established the "Leaders of the Information Age" scholarship program in conjunction with the tenth anniversary of *CIO* magazine. CIO honored thirteen of today's top IT pioneers in a special editorial feature. Each leader was awarded a $10,000 endowment in their name to the educational institution of their choice. To date, several honorees have made scholarship presentations:

Leader of the Information Age Honorees	***Educational Institution Designated to Receive Scholarship***
Charles Wong *Computer Associates International*	*College of Engineering and Applied Sciences at the State University of New York at Stony Brook*
David Duffield *PeopleSoft, Inc.*	*San Francisco Unified School District*
Andrew Grove *Intel Corp.*	*Hispanic Association of Colleges*
Larry Ellison *Oracle Corporation*	*Walnut Park Elementary School of Walnut Park, CA.*
Eckhard Pfeiffer *Compaq Computers*	*Rice University*

CIO

CIO Communications, Inc.

The CIO WRAPSHEET

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The CIO WRAPSHEET

YOUR GUIDE ON MARKETING TO INFORMATION EXECUTIVES

FALL 1998 www.cio.com/marketing VOLUME 5, NO. 3

SOUND BITES

After attending several CIO conferences, I recognized the value of partnering with CIO Communications to reach executive decision-makers—the people who don't need to ask permission. VideoServer participated in the first *CIO Perspectives™* conference as a host in April this year and continued our sponsorship with the October *CIO Perspectives* conference.

CIO Communications' focus on an executive-level audience and the counsel they provide on the best ways to reach this group is invaluable. CIOs are avid readers of *CIO* magazine and active participants at CIO conferences. There they find themselves comfortable talking about the business case for our products unlike at trade shows, which many CIOs do not attend. VideoServer benefits due to direct contact with decision-makers in a friendly, relaxed environment.

VideoServer is the market leading provider of network servers for multimedia conferencing, enabling people in multiple locations to communicate using any combination of voice, video and data. At CIO events, we're able to show attendees our new technology, which is a crucial concern of the CIO, in an informational environment and initiate next steps quickly.

Mark Thirman
Director of Market Development
VideoServer, Inc.

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Evaluating Reader Affinity: Focus Groups, Third Party Lists and Subscriber Lists

Strong reader affinity means a publication is being read. Which in turn means its advertising messages are being read. It's also been proven that the greater the reader affinity, the greater the trust in the advertisements. This is why reader affinity is so important to the media strategists at the Martha Felt Group, a high tech media agency based in Salt Lake City, Utah. They feel strong readership is what sets a publication apart from its competition. "It's easy to get a publication into the right hands, a good circulation manager can do that." says Merri Lee Barton, director of media services for the Martha Felt Group. "It's harder to get the publication read by those receiving it. Strong editorial is what makes the audience want to open it up and read it."

Validating readership is something that potential advertisers have come to expect from the publications they are considering. But how does a publication prove it? "Today, most publications provide some sort of readership data to show that the people who receive the publication actually read it," says Karen O'Bryan, media manager at Kingston Technology. "Many conduct studies over their own subscriber list, while other studies are deployed over third party lists. I give more weight to studies that are conducted over a third party list because they offer an unbiased picture of an audience's affinity to a given publication."

Often, publications conduct different types of studies in order to provide a full composite of their audiences' reading habits. Studies conducted by independent firms like Simmons or First Market Research reveal non-biased data on a publication's reader affinity when the survey list is industry wide. In addition, research deployed over a publication's own subscriber list provides IT marketers with a deeper look into the publication's editorial coverage, how readers view that coverage and how they perceive the publications' brand.

Industry expert Sam Whitmore, editor of Sam Whitmore's Media Survey, agrees, "Subscriber-based affinity studies are good accountability devices when used as part of the overall equation. They give a good historical perspective. I also feel that focus groups, in addition to the quantitative affinity studies, help show more real-time reaction to editorial changes and help keep a publication ahead of the curve."

In today's complex high tech media market, marketers must make some difficult choices. Make sure you're armed with all the facts; do not hesitate to ask publications for both third party and subscriber-based reader affinity data. After all, what good is your advertising message if no one reads it or trusts it?

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CIO Communications, Inc.

Peer2Peer: Branding on the Web

by Erica Baccus

Not too long ago, Internet users expressed anxiety about buying products online. These attitudes started to shift, so we decided to find out why.

Branding on the Web: A User's Perspective is the first in a series of qualitative research projects that Baccus Strategic Services is conducting to better understand these shifts. We investigated how people are reacting to advertising messages on the Web today, and how close they are coming to furthering the acceptance of electronic commerce.

Here are some key findings:

- Branding is possible on the Web, and the Web also provides another medium to allow you to connect emotionally with your target audience.
- The Internet's potential as a marketing tool is underutilized by marketers who view the Internet as a direct response mechanism rather than as an opportunity to extend brand value.
- On the Web, the lines between advertising and information can be blurred. Internet users have difficulty differentiating between what is advertising and what is information. In my opinion, the short term gain of "tricking" consumers into thinking that your advertisement is unbiased information, will probably make you lose credibility. Differentiators must be clarified—by both content providers and advertisers.
- Web users attribute a high degree of credibility to Web advertising. Because the Web is seen as an information vehicle, Internet users believe what they see on the Web… even if it is advertising.
- The purchase process is dramatically shortened on the Web. Consumers proceed through the purchase process and complete the process much faster than through traditional purchasing vehicles.
- Web users are ready to participate in ecommerce. In fact, I believe they are less skeptical, less fearful, and more ready to engage in electronic commerce than marketers are ready to market electronically.

This research indicates that the Web is emerging as an extremely valuable communications medium in which marketers can extend their brand value. In no way does this suggest traditional media are being replaced; but if the Web is only utilized as a method to generate leads, its value is being misunderstood and underutilized. The Web is earning its place to be included as an important ingredient in the marketing mix.

Erica Baccus is the president of Baccus Strategic Services, a qualitative research company focused on understanding how people and technology interact. The final report, Branding On The Web: A User's Perspective, is available by emailing ebaccus@baccusresearch.com. Or call 415 621-3241.

CIO Communications conducted quantitative research which substantiates Erica's qualitative findings on Web useage.

For more information, contact Lisa Brown at lbrown@cio.com.

Q&A WITH PATTY MCMANAMON

If you thought Chief Yahoo was a creative title, then you will be intrigued by this innovative title at Carat Freeman that underscores where media is headed. Patty McManamon is the associate director of Face-to-Face media for Carat Freeman, a high tech media agency based in Newton, Massachusetts. With over 20 years experience in the industry, Patty uses her expertise to develop event participation strategies as part of an integrated media plan for clients.

CIO **What is Face-to-Face media?**

McManamon Face-to-Face media is the strategic use of trade shows, conferences and seminars as part of an overall media mix. The high tech media community is very complex and there are thousands of events to choose from. At Carat Freeman, we specialize in all aspects of media whether it's a click of a mouse, a turn of a page or a face-to-face handshake. It's my job to know what is available in the high tech event arena and determine which ones would benefit our clients.

CIO **Why are conference sponsorships important in today's media mix?**

McManamon We feel that adding conference sponsorships to the mix complements a media program. Today, many programs consist of traditional print, banner space and trade show exhibits. Because of the thousands of events to choose from, clients are looking for a more focused, economic and targeted event. We use conference sponsorships because they have a limited number of sponsors and attract a high level audience that would be unattainable at other events.

CIO **Are conference sponsorships a trend of the future?**

McManamon I think the importance of this area will continue to grow. This has become evident with our clients. For example, we have just completed one of the largest integrated media plans we have ever done for one of our clients. It includes participation in select trade shows and conferences, including sponsoring *CIO* magazine's new *CIO 100 Symposium*. We have found that exclusive and semi-exclusive sponsorships like this are the most sought after face-to-face medium.

Publishing companies are also seeing the importance of this trend. Companies like IDG offer integrated marketing opportunities in print, online and trade shows & conferences. Offering all of these opportunities under one roof brings more synergy between the various media forms. An IT company can easily introduce itself through an ad, but a handshake at the right event can give the company a strategic edge over its competitors.

If you would like more information on integrated media, you can contact Patty McManamon at Carat Freeman at 617 303-3096.